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The Cavalry Journal

Published Bi-Monthly by The United States Cavalry Association

COLONEL EDWIN M. SUMNER, *(Cav.) G.S.C., Editor*
CHRISTINE HARBOUR, *Associate Editor* MR. SGT. L. B. CLARK, *Circulation*

Volume LI NOVEMBER-DECEMBER, 1942 Number 6

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Publication date: November 25, 1942. Deadline date, next issue: December 25, 1942.

THE CAVALRY JOURNAL IS NOT RESPONSIBLE FOR OPINIONS EXPRESSED IN PUBLISHED CONTRIBUTIONS

Editorial offices: 1719 K Street, Northwest, Washington, D. C. Copyright, 1942, by the U. S. Cavalry Association. Publication offices: 1406 East Franklin Street, Richmond, Virginia. Entered as second class matter at Richmond, Virginia, under the act of March 3, 1879, for mailing at special rate of postage provided in Section 412, Act of October 3, 1917. Terms: Domestic subscriptions, individual and organization, $3.00 per year. Foreign, $3.50 per year. Canada: including War Exchange Tax, $3.50. All subscriptions payable in advance. Single copies, 75c. Extra copies to subscribers, 50c. THE CAVALRY JOURNAL *does not* carry paid advertisements.

JAPAN HAS NO

By Lieutenant Colonel C. Stanton Babcock, (Cav.) G.S.C.*

IN all their articles and speeches relating to the war, Japanese, both military and civilian, have stressed certain factors which, in their opinion have been responsible for their successes. These range all the way from praises of the "august virtues of His Imperial Majesty" to accounts of the careful planning of the staffs and the rigid training undergone by both services in preparation for the campaign. Many of the reasons offered in explanation will seem invalid to Americans who are not familiar with Japanese psychology, but all are important to themselves, and a true understanding of what sustains their morale is impossible unless due consideration is given to those intangible factors which weigh so heavily with the Japanese.

Much has been written in the past about Japanese *seishin* or spirit, and there has been a tendency among Westerners to discount its value, especially in recent years after Japan's military machine became bogged down in China. It would be a grave mistake, of course, to accept the Japanese belief that their particular brand of spiritual training turns out men of superhuman courage and devotion to duty, but it should be recognized that it has developed an extraordinary confidence in the armed forces, both among service personnel and among the people at large. Constant repetition of the simple tenets of this particular brand of propaganda, aided by the close integration of the army with village and family life, has built up a unity of ideas and ideals throughout the Empire that is paying big dividends in the present crisis. This deep-rooted confidence in the abilities of the individual Japanese soldier has done much to offset the inferiority complex prevalent among the Japanese for many years in regard to the technical superiority of the Western powers. Official propaganda and war news are designed to foster this spirit of trust, and great care is exercised to see that no intimation of any military setback ever reaches the ears of the people at home. The initial sweeping successes of their armies and fleets have served to dispel any doubts which might have lingered in the minds of the unregenerate few. The war spirit and morale of the people were higher in the summer of 1942 than ever before. *Yamato Damashi* —the Spirit of Japan—is no longer simply a slogan for patriotic spell-binders; it has entered deeply into the lives of large sections of the people.

The authorities have used the China Incident, admittedly unpopular from the start, to prepare the country—militarily, economically, and spiritually—for war. Restrictive measures which would have caused undue hardships and considerable unrest if applied suddenly, before the gravity of the situation had become evident to the man in the street, were introduced gradually over a long period of time as the necessity for each further limitation became apparent. The very failure of the war in China was used to prepare the nation mentally, and to induce the populace to accept the idea of total warfare. Much as the people may have deplored the outbreak of the Incident, there was never a moment's doubt in their minds as to how it must end. As the

Japanese troops marching into captured territory.

*EDITOR'S NOTE: Colonel Babcock, formerly attached to the American Embassy, Tokyo, Japan, recently returned to this country on the diplomatic-exchange ship, *Gripsholm*.

NO ROAD BACK

Japanese landing troops after their invading force has established a foothold.

realization came home to them of the need for greater and greater efforts they accepted the inevitable reorganization of the country's life with characteristic calmness and quiet determination. Three years of clever and incessant propaganda, coupled with the knowledge of American and British aid to the Chungking régime, had convinced the majority of the Japanese people that the two democracies were to blame for the desperate situation in which their country found itself. Gradually the realization was borne in upon them that war with the United States was a possibility, and that if it came every last ounce of the country's effort would be called forth. There are many Japanese persons who would have given a great deal to avoid such a war, but they understood how impossible it was to influence the course of events, and therefore fatalistically conformed the pattern of their lives to the measures required to prepare the country for its supreme test.

This resigned acceptance of the dictates of constituted authority and the lack of outward enthusiasm were mistaken by superficial foreign observers as war weariness and discontent. What such observers overlooked is that even in the most liberal Japanese the emphasis is on the *Japanese*. In the final analysis his loyalty goes unquestionably to his country, and he wastes no time or thought in deploring mistakes made in the past. He knows that, whatever may have been the causes, his country is now fighting for its life and he is ready in every way for total war. As Japanese commentators never fail to reiterate, Japan passed through the period of mental and physical preparation for war during the four years prior to December, 1941, while the United

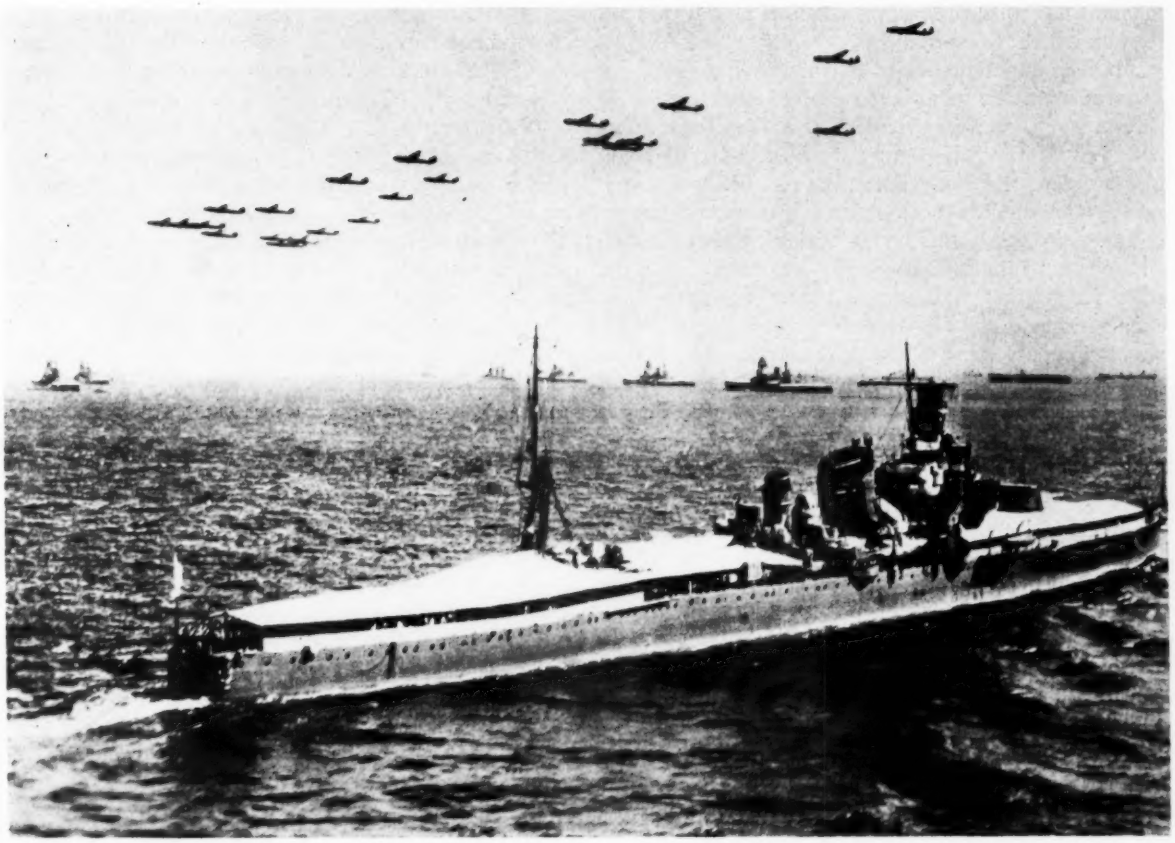
States must now make those same adjustments in a far shorter time, with a people much less accustomed to discipline and sacrifice, and under the relentless stress and pressure of actual warfare.

The Japanese point out that during the four years of the undeclared war in China they reorganized the economy of their country, put it on a wartime basis, and actually increased its industrial output manyfold. Budget figures released in the press indicate that only forty per cent of the appropriations voted to the defense forces was expended for the conduct of the China Incident, while sixty per cent was used to prepare the services and the industrial plant for "greater emergencies yet to come." Similarly only one-fifth of the materials and weapons furnished the services was sent to China, the rest being used to expand and modernize the armies and fleets which were to be called upon when war really came. Oversimplified and vague as these figures are, the Japanese nevertheless use them to support their premise that the war in China has left Japan stronger rather than weaker, and in a better position than ever before to strike at her enemies.

The army used the China war as a test for its tactical doctrines, a proving ground for its matériel, and a training school for its personnel. The constant rotation of officers and men through the ranks of the active divisions on the China front has built up a magnificent reserve of men with combat experience. Many of these were used as nuclei in the formation of new divisions, so that when the war began all of Japan's combat troops contained at least a core of seasoned veterans.

The units and commanders designated for the various tasks in the war for which they were preparing were selected months in advance and concentrated in special training areas where the terrain and the climatic conditions approximated those in the regions where they were to fight. The Malayan army trained in Hainan and Indo-China, the Philippine force in Formosa, while both units practiced landing operations during the late summer and fall of 1941 along the South China coast. Even the divisions chosen to attack Hongkong were given rigorous training in night fighting and in storming pillboxes in the hills near Canton. So realistic was this training that the troops are reported to have suffered "a number of casualties." This kind of training sent the Japanese armies into the

Japanese tanks parade through Tokyo streets prior to embarkation to an unknown battle front.



Japanese Navy display during celebration of anniversary of Nippon Empire.

field fully cognizant of, and excellently prepared for the specific tasks they were to perform, and organized and equipped with superabundant strength to overcome the degree of resistance which they knew they could expect.

Japanese commentators make no secret of the fact that the High Command was fully informed for a period of a year before the war as to the strength, dispositions, and likely plans for defense of their then potential enemies. They say they gathered a good deal of this information by "observing" (probably through secret agents) maneuvers in the Philippines and in Malaya. With all this information in their possession the Japanese were able to make detailed plans for attack, and to estimate accurately the number of men and the types and quantity of weapons, matériel, and supplies that their armies would need in each of the theaters of operations.

The extent of knowledge of the enemy situation was freely published in Japan, after the conclusion of the initial campaigns, in an effort to impress upon the public the need for strictest observance of their own *Military Secrets Act*. This law, which is probably the most airtight ever enacted, is credited with having been responsible for the element of surprise with which Japan overwhelmed her enemies. The authorities draw striking contrasts between the secrecy which shrouded every Japanese movement and the "boastful and stupid publicity indulged in by the ABCD Powers."

Considerable use was made of propaganda which the Japanese euphemistically termed "informing the oppressed inhabitants of the Co-Prosperity Sphere of Japan's peaceful intentions." Great claims were made for the success of this campaign, and the Japanese people were regaled over and over again with descriptions of the throngs of happy natives who turned out to welcome the Nipponese troops wherever they advanced. Personal experience accounts bear out these claims to some extent, particularly in Burma and the northern Malay states where anti-British feeling appears to have been particularly intense.

The Japanese make a great point of the fact that their army considers no terrain "impassable." They assert that their tactics were frequently based on the principle of attacking through such an area in the knowledge that their enemies had been lulled into a false sense of security and complacency by the very fact of its so-called impassability. They emphasize also the disastrous effect on the defenders' morale once an "impregnable" area has been pierced. Here they frankly admit the tutelage of the Germans who, frequently since the spring of 1940, have shown the world how often the Allied com-

manders had mistaken terrain which is merely *difficult* for that which is *impassable*.

Another important factor which the Japanese have kept constantly in mind is the prime importance of air superiority. Admitting frankly their enemies' greater power in the air if the entire world situation is taken into account, they knew nevertheless that they could seize, and maintain for a long time, command of the air in East Asia, and from the very beginning they directed all their energies to that end. Air force units, of both the army and the navy, concentrated their strength against enemy airfields, and not until the opposing air strength was thoroughly crushed was any considerable part of the Japanese air force diverted to other missions. Whenever the enemy managed to reinforce or reconstitute his battered air units in any particular area, the Japanese air force immediately returned to its primary mission and stayed with it until unquestioned command of the air was once more achieved.

Their use of dive and light bombers as a kind of long-range artillery was closely patterned on German tactics, as the Japanese themselves admit; and it was especially effective in the early stages of the Malayan campaign where the terrain made observation difficult and the emplacement of large numbers of artillery batteries virtually impossible.

There was, according to all accounts, excellent co-operation between the land and sea forces and the air arm of both services. Whatever traditional jealousy that might have existed between the army and the navy, it did not extend to the armies and fleets at the front. The teamwork left nothing to be desired. "Task forces," organized during the summer of 1941, trained and worked together continuously until the outbreak of hostilities. Four years of frequent collaboration against an active enemy on the coasts and rivers of China had given both services much valuable experience, which was put to good use in planning and organizing their joint expeditionary forces. Details of command, supply, and other matters which might have given rise to controversy were carefully worked out in advance and clearly understood by all concerned.

The most important factor contributing to their victories, according to all Japanese military commentators, and the one which carries the most weight with the outside observer, is the superb offensive spirit which permeates all of the armed forces of the Empire. This spirit, recognized by all competent military men as the most vital intangible factor in achieving victory, has been nourished and perpetuated since the foundation of the modern Japanese Army until it has become a veritable fetish to all ranks. The High Command has counted heavily on the advantages this would give them over their less aggressive enemies. They were well aware of the psychological effect produced on the British, Dutch, and Americans by their reliance on defense.

Japanese forces consolidate their lines of communication.

Jap Machine-Gunners in action on Chinese front.

They put great store in the "flabbiness produced in the white man after nearly a century of easy and luxurious rule in the Far East." They attach great importance to the former disunity in the United States over the war issue, and count on an appreciable interval before an aroused nation can find itself and develop a fighting spirit of its own. By that time, they feel, Japan will be in complete control of all of East Asia.

They balanced all those factors against Japan's hard, aggressive spirit, and they found the scales tipped deeply in their favor. And when they struck they made no provision for failure and left no road open for retreat. They struck with all the force and power at their command, risking all on one magnificent gamble. And they will continue to fight in the same manner. In the words of their leader, Premier General Tojo, "Japan has no road back. She must and will continue to attack with every ounce of strength of her hundred million people until the British Empire and the United States are crushed forever."

"The defeat of Japan will be a long process, but it can be expedited by taking thought. That means, to begin with, realizing the true dimensions of the problem the Japanese have set us, getting rid of our illusions, and trying, so far as we can, to enter into the Japanese military mind. There are men in the State Department and in the United States Embassy at Tokyo who have a good notion of how that mind works.

"The Japanese Naval General Staff has checked and re-checked all its calculations of the military problems. Every detail that could be foreseen, every development that could be imagined, have been provided for. Their plans are as complete as such plans can be. But wars are not won by plans alone. In the end it is mind against mind, will against will."—*The Japanese Enemy*, by HUGH BYAS.

A Study for G-2's and S-2's

*By Lt. Col. John R. Lovell, C.A.C.**

THE G-2 or S-2 is the Commander's expert consultant on the enemy. It is the duty of the intelligence officer to be familiar with all things pertaining to the enemy and to think in terms of the enemy. When the enemy is about to initiate an operation or take on military action, the intelligence officer should be the first to give timely warning to the Commander concerned.

The purpose of this article is to present an outline of the essential informaiton regarding the organization, tactics, and strategy of the German Army that the combat intelligence officer should know.

The strategic and tactical principles described here also apply to the Japanese, who have modeled their military employment after the Germans. (Japan and Germany exchanged military missions many months before the Japanese attacked the United States last December.)

The methods of German military employment are simple and, at the same time, quite flexible. They must be simple in order that the mass development and training of military leaders be possible; and they must be flexible in order that a satisfactory solution may be had for all the situations they have encountered. Without an explanation of their methods, their entire military system is quite confusing unless their organization and command methods, as well as their tactical and strategical principles, are understood.

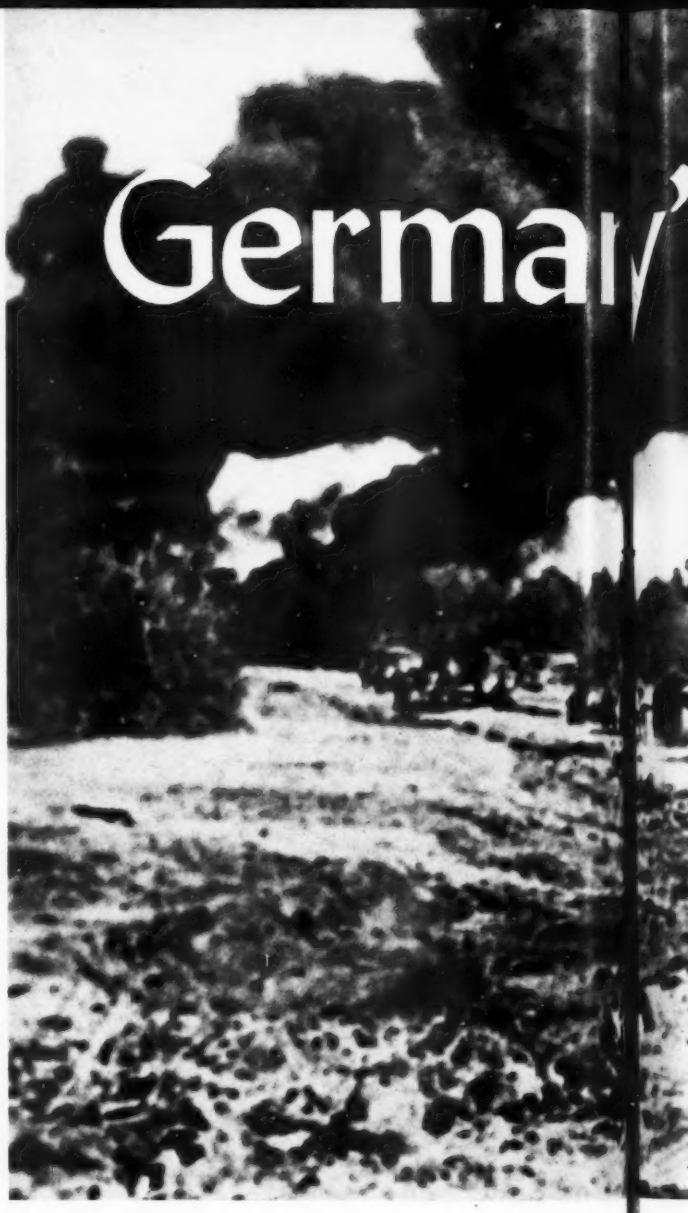
German military organization is based on the Einheit System. By this method, pools of basic units are mobilized. In a larger sense, these basic units are the various types of divisions and GHQ organizations.

According to the estimated needs, units are taken from the pools to form task forces. They are assembled and trained in areas resembling as closely as possible those in which they are expected to engage in combat. They are molded into smoothly-functioning, hard-hitting combat teams for the accomplishment of specific tasks.

When the units from the pools are allotted to a task force, they are placed under one commander. Elements from all branches of the service—that is, Army, Navy, and Air Force—function together in the same task force under one commander as if they all wore the same uniform. Rivalry between the components of the task forces is discouraged rather than encouraged. All leaders encourage and inspire every individual with the idea that all must work for the common good of the entire combat team.

The term, task force, is used frequently to designate many different kinds of forces. To the German, a task force has a very definite meaning. The task force is a military force composed of the necessary arms and services under one commander for the accomplishment of a single specified mission.

*Former American Military Attaché, Berlin, Germany.



German task forces vary in size from a squad to a group of armies. Examples of task forces are *Oberst* (Colonel) Mikosch's reinforced pioneer battalion which captured Fort Eben Emael in Belgium and later broke through the Maginot Line near Saarbruecken; Rommel's corps in North Africa; von Falkenhorst's command in Norway; and von Brauchitsch's army groups in Poland, the West and the East.

With regard to the manner in which the Germans employ task forces, there are several important features to point out. Almost every German organization in combat is reinforced by GHQ units. This is shown graphically on the organization chart that follows. These units are trained together so they will function well in the confusion of modern combat. All forces engaged on any specific mission are under one commander.

Two or more task forces are never assigned to the accomplishment of an identical mission. This explains why defensive aviation, antiaircraft artillery, civilian air

ı/'s War Machine

Red Army in a savage counteroffensive forces Germans to fall back.

raid defense organizations, and the warning services engaged in the antiaircraft defense of a specific objective are under one commander. It also explains why the coast defense artillery is organically a part of the German Navy.

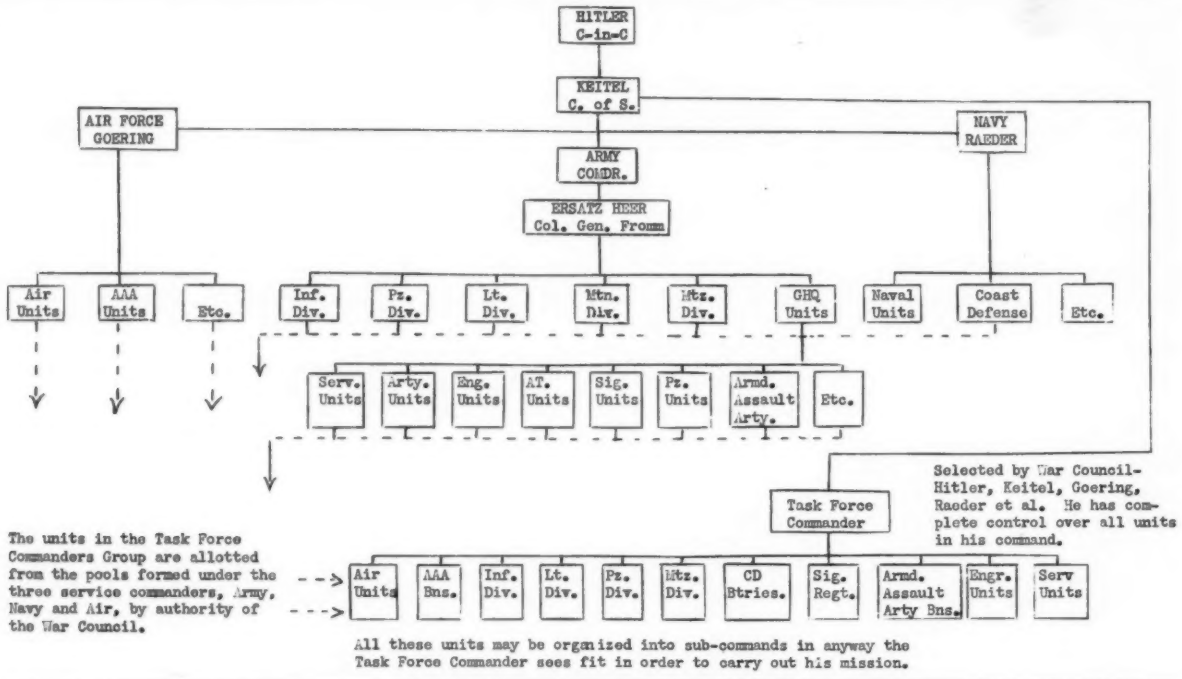
A military commander charged with a definite mission, is in absolute control of all the means to accomplish that mission. He is responsible only to one authority for the outcome and can have no excuse for failure.

A last word about unity of command. American observers on European battlefields have noted that unity of command is a weapon in itself, the same as terrain, weather conditions, and other factors. With a united command on the offensive, an enemy weakness can be exploited in the shortest time with all the resources of the command; on the defense, every resource can be used to meet a military emergency until the time can be gained to resume the attack.

German divisions, corps, and armies are the command framework around which task forces are formed.

The division is a unit of all arms and services under one commander containing the minimum means for the accomplishment of certain types of missions. When the need arises for a new type of division, the German High Command forms it. Thus, we find numerous kinds of combat divisions; panzer, infantry, light, motorized, mountain, border, police, line of communications, and fortress divisions. There may be others. These combat divisions are organized, trained, and equipped for special types of missions. They contain only the minimum needs to sustain themselves in combat under normal conditions.

Corps and armies are merely command skeletons around which larger task forces are built. Organically, these units contain only commanders, staffs, and signal



units. The practice of holding the size of the subordinate units of arms in a standard organization to the minimum is economical as well as effective. It enables the maximum combat power to be applied at the selected vital points while holding units have the minimum needs to perform their missions.

A good example to illustrate the German method of military organization is the way the Luftwaffe handles its air fleets. Germany has organized air fleets in all of the active theaters of war—France and the Low Countries, Denmark and Norway, the Mediterranean and North Africa, on the East Front behind each group of armies and in Germany proper. These air fleets are administrative and tactical organizations. In each air fleet area, there are ground crews and facilities for handling a large number of combat aircraft. Germany's air power is shuttled around these air fleets according to the situation. If a serious air threat loomed in the west, combat aviation could be transferred from the other air fleets to the west on short notice. Antiaircraft organization and employment is identical in principle. There is usually an antiaircraft corps in each air fleet.

A German principle of command is enunciated as follows:

"Select the commander, assign him to the mission, give him the means, and permit him to accomplish the task unhampered."

This is merely another way of phrasing the unity of command and responsibility and the task force principles.

After a commander has been assigned a mission, he selects his staff (which may include members of the Army, Navy, and Air Force General Staffs), adopts a general plan and, from it, prepares a list of means with which to accomplish his task. The main considerations in the preparation of the list of means are:

1. The Mission (Offensive or defensive)
2. The Enemy
   - Organization (analyses for weaknesses).
   - Strength (particularly in various arms).
   - Composition (air power and tanks).
   - Morale (Can propaganda be used?).
   - Leadership (higher, field, and company grades).
   - Dispositions (Where can traps be formed and enemy destroyed?).
3. The Terrain (desert, swampy, normal, or mountainous.)
4. The Climate, Season and Weather (Russia in winter or North Africa in summer.)
5. The Time Element (When must the task be accomplished so that it may be timed with other operations?)
6. The Theater of War (Long lines of communications. Supply and evacuation problems. Transportation.)
7. The Means Available (There is never enough air power.)

8. The Judgment of the commander and his staff.
9. The General Plan.

The diagram opposite illustrates the method by which large German task forces are formed.

The German High Command allots the means to the task force commander after a similar consideration of the foregoing factors. When the means are made available, they resemble a college football squad which reports to the coach in the first week of September. They are a squad but not a team.

A German task force prepared for combat is like an Army football team prepared for the Navy game. It is organized, drilled, and trained for the task at hand—to defeat a particular opponent. As a mater of fact, the same considerations outlined earlier for the composition of a German task force may apply equally well for the football team.

When the means are allotted to a task force commander, all or part of them are reallotted to subordinate echelons in accordance with their estimated needs. Thus any standard German unit in combat will normally be reinforced. Intelligence officers can readily understand why the composition of practically every German unit with which they come in contact will be different. The problem then is to probe by aggressive reconnaissance methods to determine what units are opposite, how they are organized, and of what they are composed.

Just a word about the designation of units. The method of allotting numerical designations is without pattern. It is different in almost every case encountered. No deduction based on numerical designations is justified without other supporting evidence.

When a standard organization such as a regiment, division, or a corps is not used as the nucleus of a task force, the cluster of units is often called a "Gruppe" [Group (of units)]. Often the name of the commander is attached to identify it.

German strategical and tactical principles are similar. They are based on the principle of annihilation as evolved by von Clausewitz, and as carried into execution by Graf von Schlieffen in his military text book "Cannae."

The principles of war, according to the German conception, are unchanged; the methods whereby they are realized are different.

During World War I, the Germans used the supporting arms to advance the infantry to where it could come to grips with the enemy infantry and destroy it or drive it from the field. In this war, the German supporting arms are used to destroy the enemy without forcing the infantry to engage in combat. The breakthroughs are made by special assault troops (usually pioneers). Air-panzer-motorized infantry teams, pow-

Panzer column fords stream on the Russo-German front.

erfully supported by artillery, blast their way through to make the encirclements; and the annihilations in the traps are accomplished largely by the fire power of the supporting arms. The infantry follows up, holds the ground, and takes charge of the prisoners. Large masses of infantry do not come in contact with each other with the resulting mass slaughter reminiscent of Verdun in the first World War.

No description of German tactics and strategy is complete without special mention of the Principle of Surprise. Measures to achieve surprise are taken in every German military action.

German military texts state that surprise is accomplished:

By secrecy.
By deception.
By speed of execution.

Secrecy and speed of execution are self-explanatory. It is with regard to deception that intelligence officers must be most careful. There is no fixed pattern for deception, and it will be different in almost every instance. Suffice it to say that German commanders take great pains to deceive their opponents in an effort to achieve the maximum surprise effect in conjunction with a later operation.

The German commander utilizes deception to a wide extent in neutralizing his enemy's combat power by diverting it to dummy or unimportant objectives.

The German objective in combat is to destroy the enemy's military force. Every action is directed toward that end. Victory is never a fact until the enemy is destroyed.

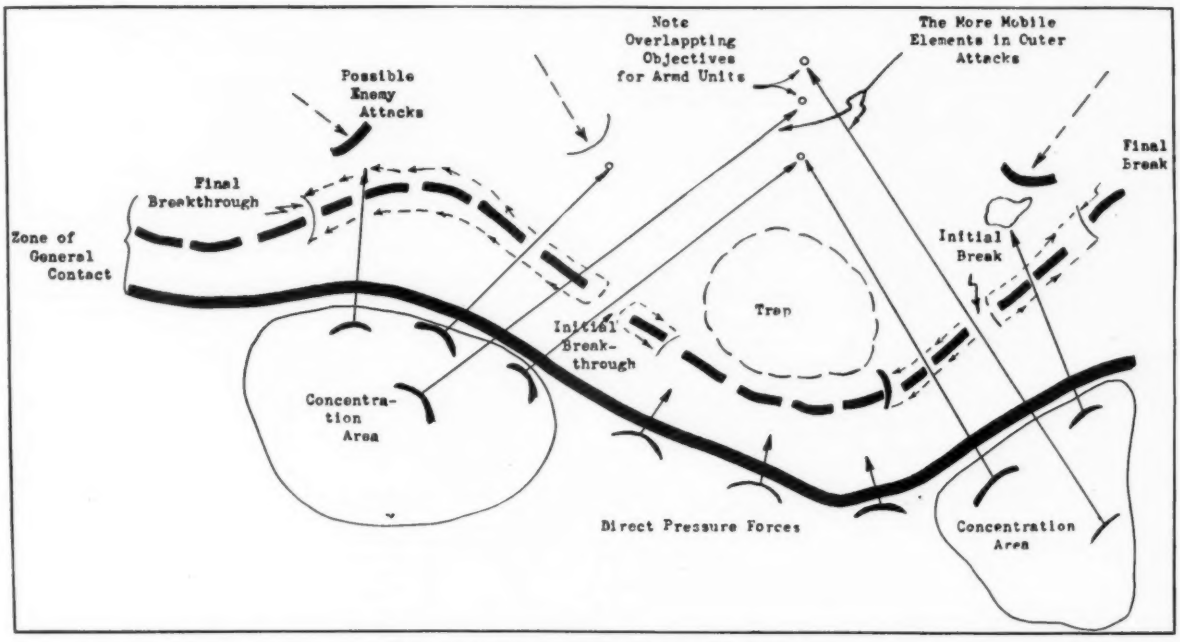
Information of the enemy is vital. Based on this intelligence, decisions are made, plans are formulated, and task forces are organized, equipped, and trained.

Consequently, the Germans place great stress on the functions of their military intelligence service and, in the field, on their reconnaissance agencies.

German reconnaissance units are very aggressive. They are trained in this way in order to obtain specific information and in order to deny information to their opponents (preserve secrecy). These reconnaissance units are often reinforced and will usually attack as soon as contact is established. If the opposition is too strong, they will utilize their mobility—withdraw and go around the position. They habitually report to the higher commanders not only all details as to the enemy but also as to the terrain or any special conditions they encounter.

German leaders of all grades are always well forward where they get the first hand accounts of reconnaissance, where they can get the "feel" of the situation, and where they can issue timely orders to their subordinates for the rapid employment of their units. There is

A wounded Nazi officer giving orders at the front.



Schematic Diagram of A German Attack.

no need to have fast-striking combat commands unless their mobility and shock action are utilized.

As a result of intelligence and reconnaissance activities, the enemy's weaknesses are developed. Deceptive measures are invoked, while overwhelming concentrations of combat power are made at vital points. At the right moment, the breakthrough is made, the encirclement is achieved and the annihilation is accomplished in the shortest possible time.

The description just made of German combat methods is the basis of all of their strategical and tactical doctrines. Those doctrines are practiced in all echelons of command. They may be summarized as follows:

1. Obtain all possible information of the enemy, especially his detailed dispositions.
2. Select weak points where breakthroughs may be accomplished and large enemy forces may be trapped.
3. Concentrate combat power opposite the weak points.
4. Hold the enemy in his position by containing his forces, or draw him out of position as desired by deceptive operations.
5. Breakthrough.
6. Encirclement.
7. Annihilation.

The German commander places great emphasis on the use of terrain. He studies it in great detail in order that he can use it to his advantage. Every effort is made to attack down hill, to employ obstacles to assist in the achievement of his objectives, to obtain the observation required for the effective employment of the supporting arms, and to develop the scheme of maneuver so that his opponent is placed at the maximum disadvantage from a terrain standpoint. Terrain appreciation is an important subject in every German military school.

The breakthrough is usually made by special assault troops. The point of breakthrough is thoroughly neutralized by large concentrations of artillery and air power. The initial breakthrough is normally only 1,000 yards to a mile wide but is immediately widened by attacks from the *rear*.

The encirclement is composed of two spearhead attacks advancing parallel to each other. The outer spearhead is composed of the more mobile elements. Each spearhead is preceded by an air—panzer—motorized infantry team to break the way. The direction of attack is usually a straight line even though the operation is termed an "encirclement." See diagram.

When one flank is an obstacle, as at Dunkirk, the encirclement operation is over one flank only.

The timing of the attacks depends entirely on the situation. In Holland and Belgium, the holding attack was launched first to draw mobile elements into the trap. At Kiev, the holding attack was not launched until the encircling forces had reached their objectives.

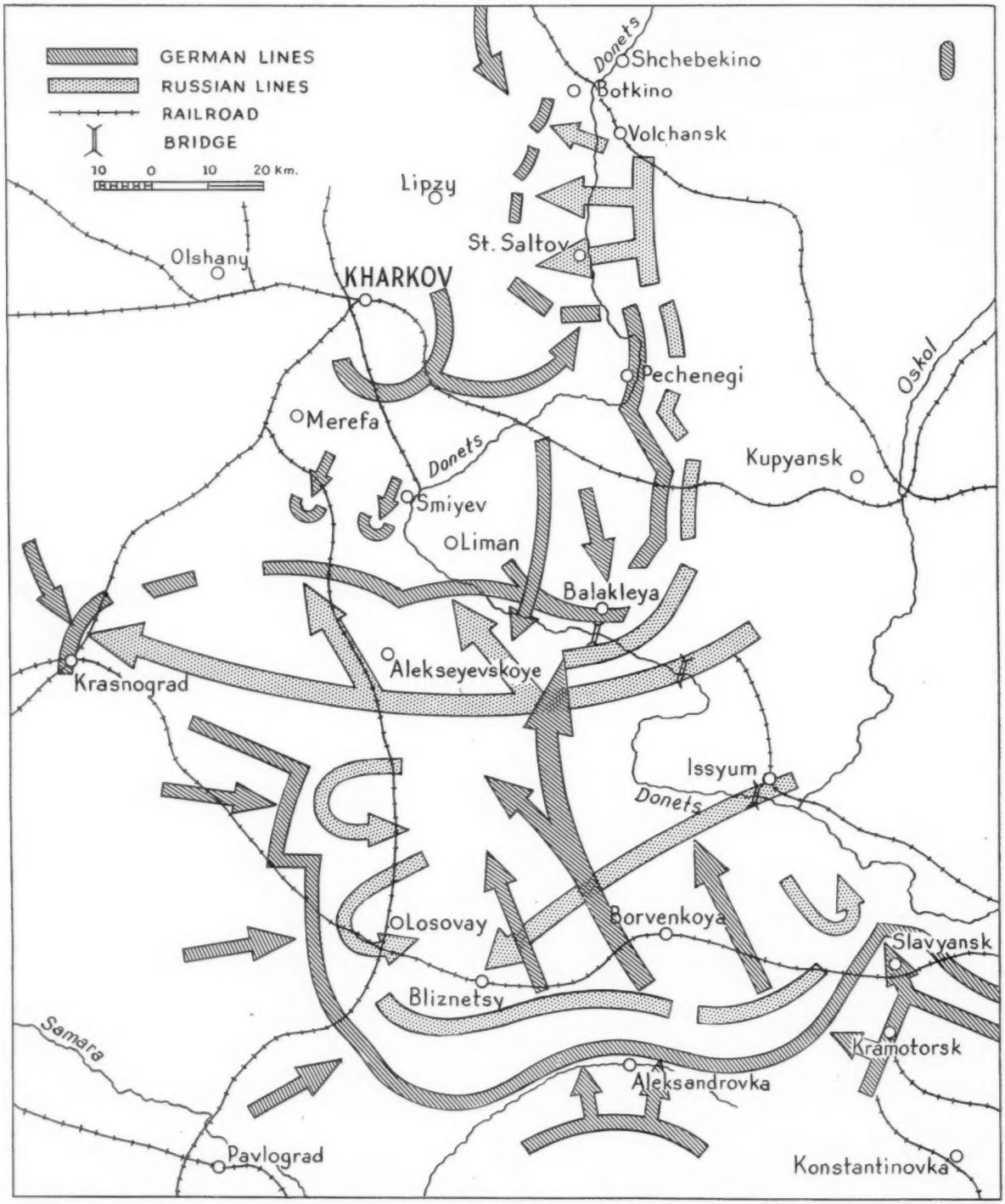
The principles outlined in the preceding explanation and diagram hold for all task force organizations in a particular operation. Every unit has its objective, its mission. Their method: infiltrate, surround, and destroy.

Our intelligence officers should be cautioned that if their unit is heavily engaged toward the front they should be on the alert, because an attack is most certain to come from a flank or even in the rear. They should

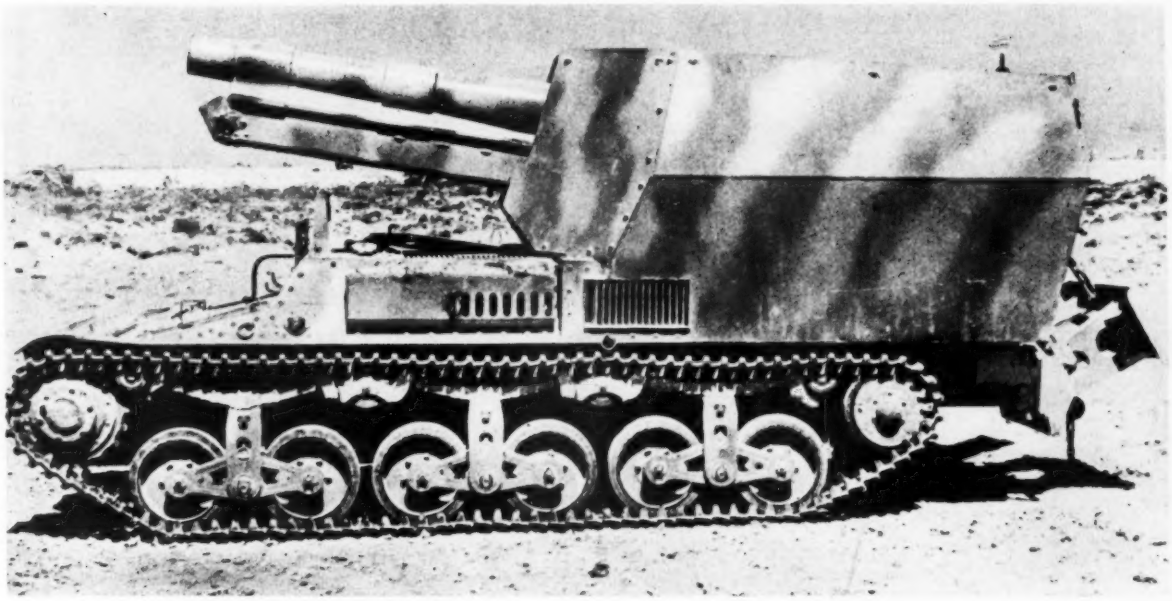
follow the operations of their own command, study the terrain and watch for traps.

The word "defense" has almost a lost meaning in the German military vocabulary. The German commander thinks only in terms of attack. Above all, the German recognizes that a well coördinated attack with modern weapons cannot be stopped by any line, no matter how well fortified it may be.

During the year, 1941, the initiative was taken from the Germans for the first time in any campaign. When



OPERATIONS AROUND KHARKOV MAY 12-25, 1942



This German 150mm self-propelled artillery was recently captured in Libya. (Date of photo, October 3, 1942.)

faced by superior odds they withdrew, and when their opponents overextended themselves they launched a counteroffensive. In other cases, German staff officers have explained that they allowed the enemy to advance into a trap before launching their attack. This was particularly noteworthy at Kharkov in May of this year. Note diagram.

In the past, the Germans have had the advantage because of their tremendous superiority of combat power; that is, aviation, tanks, signal communications and trained manpower. The organization of their entire nation into one vast war machine has enabled them to wage a total war against a group of uncoördinated poorly prepared nations.

The year 1942 is the 1917 of this War. We shall see the turning point of German military achievement this year. Hitler will lose the initiative and in 1943 will be forced on the defensive.

Americans take to this type of war naturally. It is more like our game of football than any other comparison. It is every man for himself in the execution of the task in a large team. In this game, the rules are few and they may be changed at any moment. American forces require only the right tools, the training and the experience. They are getting the tools and the training, and they will soon acquire the experience.

When American forces clash with German forces, there will be a loud bang. Later, there will be ups and downs but of the final outcome there will never be any doubt.

Nazi reconnaissance detachment in the vicinity of Tobruk.

As Told to the Editorial Staff of The Cavalry Journal

By Major Henry Cabot Lodge, Jr.
Cavalry Reserve

The author, United States Senator from Massachusetts, was sent to Egypt as an observer last summer, and while there participated with other American tankmen in action on the Libyan-Egyptian Front
—Editor

The Enemy in Africa

THE British Eighth Army is now pursuing the fleeing German *Afrika Korps* back over the route along which we saw it advance last summer. Simultaneously, American expeditionary troops have "landed in force" on the western coast of Africa to allay any possible German retreat into French North African territory. With these two recent developments in mind the strategic importance of Africa and the Middle East is again limelighted.

During the past two years our enemy in Africa has seen fit to keep a considerable army in Italian Libya and, more recently, in Egypt. In addition, Germany has maintained even more divisions in the Balkans and Italy. Undoubtedly, the Axis has had an envious eye on the Middle East, control of which would mean possession of the Suez as well as the rich oil fields of the Tigris-Euphrates and the Persian Gulf.

The loss to the Allies of the Middle East would have been the greatest shock that they would have yet sustained. It would have seriously imperiled the British Empire and relegated their war effort to a defensive rôle in the United Kingdom. It would have isolated, if not eliminated, both China and Russia from major participation in the war. It would have aligned the Moslem world with the Axis, consigned Africa to Axis exploitation, and enabled Hitler and the Japanese to join hands.

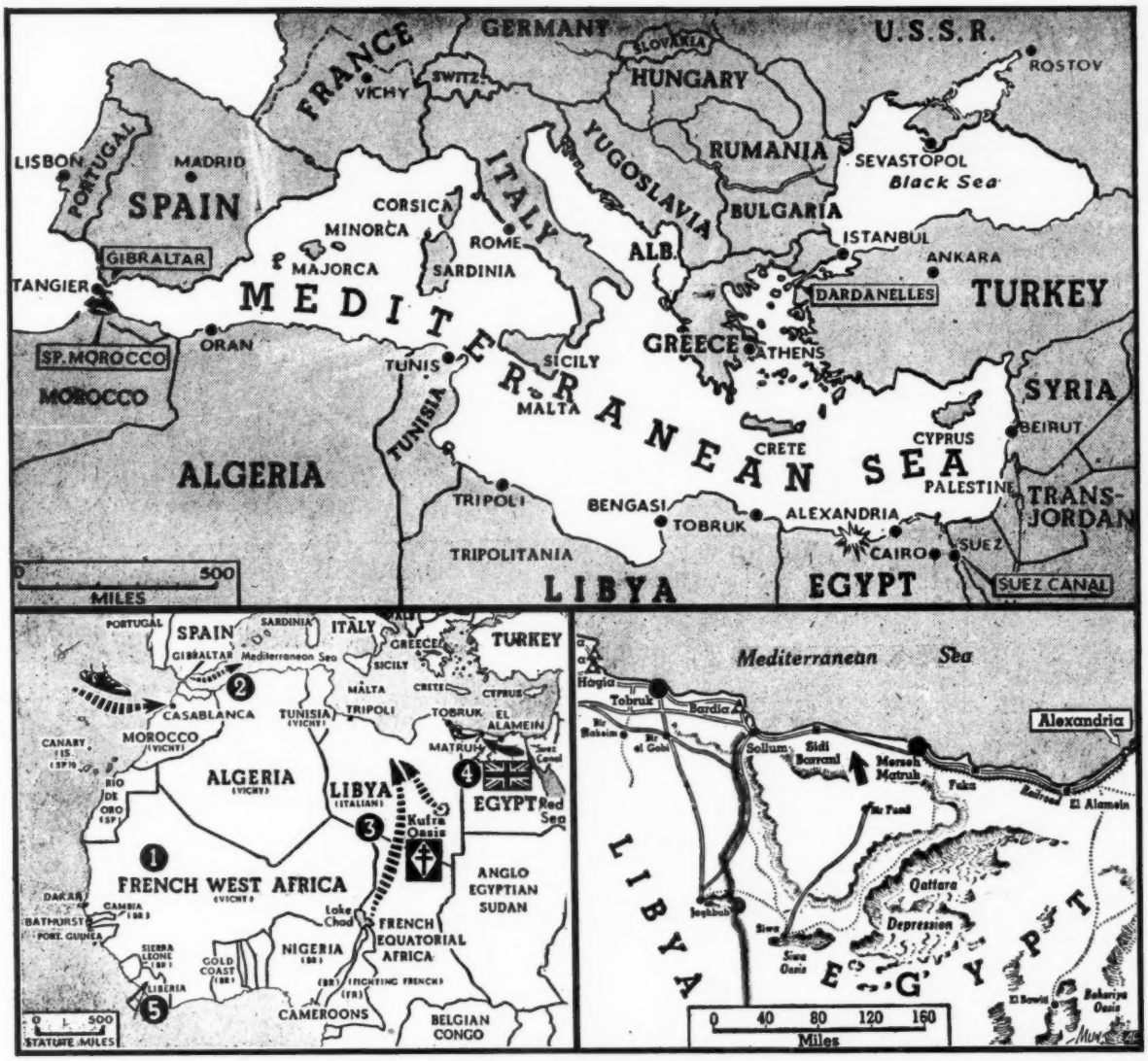
At the same time, no great amount of imagination is required to conclude that as soon as this theater of war is under complete Allied control, Hitler is not only blocked in his program of expansion, but Germany itself is menaced from any one of several directions.

For two years the British forces in the Middle East have fought against an enemy formidably trained and equipped and often superior in strength. At last the tide of war in Africa has turned, and the Germans are suffering their first major defeat. But the war is still far from over, and other German armies remain to be conquered. The job ahead is still not an easy one; and our enemy whenever and wherever we meet him, is *not* a weakling.

This I learned while serving with other American tankmen during the German advance in Libya last summer. We were shelled, bombed, and machine gunned. We saw the German army in action, saw it work with precision and efficiency, saw it push back the British forces, and seriously endanger the Allied life line in the Middle East. Although our small American tank force "took it" and struck back with a final score that did credit to both men and machines, from our short experience in Africa we acquired a healthy respect for the Nazi fighting machine.

I was serving on active duty with the Second Armored Division last spring when I learned that a small group of volunteer tankmen—officers and men—were to be sent to Libya to observe and participate in the fighting then going on. I was fortunately among those who were selected to go.

We flew from the United States, across the Atlantic and over the teeming continent of Africa. This trip in itself was exemplary of the new developments brought



THE MEDITERRANEAN AREA

Americans are pushing forward from the West, while the British pursue the fleeing German Army from the East.

about by this war, and the vital importance of Africa as a link to future victory.

The Ferry Command has performed a miracle in creating and operating this route. It enjoins distant continents, straddles sea, jungle and desert, and furnishes a supply line that measures transit in days and hours instead of months.

Spacious airfields have been established in country that only a few months ago was known as the "White Man's Graveyard." Comfortable quarters have been built for ground crews, antiaircraft guns erected, doctors and medicines imported. Even new movies are flown in.

Several days after our departure from the States we arrived in Cairo and reported for duty. The next day we moved up to the front in a train crowded with British, Free French, Indian, and Australian soldiers.

At Capuzzo, on the Libyan-Egyptian frontier, most of the party of Americans went on to Bardia for a week's training with British units. I went forward to make an over-all observation of the combat area where Field Marshal Rommel was just beginning his push that eventually took him to within forty miles of Alexandria.

One day we were driving a command car from Tobruk to Bardia when the Stukas appeared. We jumped out of the car and dived headlong for a slit trench just about the time that they dived. They were after a line of British supply trucks en route to the front. After the Stukas blasted the entire line of trucks they swept back in graceful arcs and started strafing us with machine guns.

Back in Bardia I learned that our men had made rapid progress in their training and were ready for combat. They went into action on June 11th, swung their tanks alongside British-manned tanks, and were promptly attacked by German tanks from a range of about 4,000 yards.

One of the latest German tanks, the *Mark IV Special*, knocked out in Libya.

The main engagement started at about 3:00 AM. All day the American crews kept up a withering fire that held the Germans some 700 yards away. Although it is difficult to keep an accurate score in a tank battle, the American crew knocked out at least eight German machines before the Germans brought up their 88mm guns and the British gave the order to retreat. The American machines and men had been through their baptism of fire and acquitted themselves well. The next day the men turned in their machines and prepared to report what they had learned.

One of the important conclusions drawn from our observations and brief experience was that the remarkably efficient organization, drive, and timing of the German army should not be underestimated. Nor should it be forgotten that the German equipment is on a par with their aggressiveness.

A man would have to be blind not to see that the German soldiers were superbly equipped for the peculiar rigors of desert fighting. German civilians have had to content themselves with *ersatz* makeshifts, but not their fighting men. One afternoon I talked with a German prisoner who was calmly confident that his side would win—"We will win," he said, "because our equipment and organization are better."

I did not remind him that America had not yet added her first punch.

Now that that time has come, America must have quality as well as quantity. Her army must have supply systems, organization, and above all, brilliant military leadership on the battlefield. America can achieve all of this through the individuals who make up our army and the individuals who back it.

As we left Africa last summer one man remarked, "It seems a damned shame to clear out after our first crack at 'em."

"Yeah," said another, "but we'll be back—here or France or somewhere."

Already American men and machines are back in Africa. Sooner or later they will come into contact with the enemy. That enemy must be beaten at all costs, must be driven out of Africa in order that we may keep the supply lines open, hold out hope to the fighting people of China, Russia, and all the conquered countries, and secure our own route to future victory.

Notes On the Afrika Korps

*By Major Joe Ahee**

FROM my observations in North Africa last summer certain deductions regarding the German army and its operations were inevitable.

Great thoroughness and detailed preparation is displayed in all of their actions. This shows up in many ways; from the spare parts that they bring with them for American and British tanks, to the musical programs furnished soldiers behind the lines. Apparently they lay great stress on prompt and frequent delivery of letters from home because a captured German diary stated that the German soldiers were angry because *one week* had gone by without any mail.

This same attention to detail is also shown in items of equipment. The Germans have a very practical rubber ground sheet which comes in an envelope that can be fastened to the belt. A German parachutist's uniform has forty-seven separate pockets and containers.

The Germans seem to have planned for every emergency and apparently do not "miss a trick." Their program of maintaining their troops in perfect physical condition is another example of their exactitude. Even at extremely forward positons they are up at 5:15 AM and have fifteen minutes of calisthenics which are followed by roll call and inspection.

In their employment of armored units, the Germans appear to use them *as a corps*. They frequently move at night and often attack on moonlight nights. Their practice is never to attack anything stronger than they are. They tend rather to infiltrate to supply lines and rear installations and leave strong points alone.

Strategically, the Germans move fast. Tactically, their reconnaissance moves fast, but their tanks move relatively slowly from one hulldown position to another. They keep their life line well out of striking distance and launch their tank attacks on a different axis from that used by their infantry. They seldom fight a tank *versus* tank battle but use tank and antitank units in combination, with the antitank units pitted aaginst the opposing tanks. In battle they avoid firing the front of tanks but seek to achieve a crossfire. The Germans replenish their ammunition supply behind their antitank guns, which are brought forward among the tanks or are concealed behind the derelict vehicles which clutter up the desert. Practically every German vehicle pulls a 50mm antitank gun.

German tanks are sent forward with a ferrying crew who bring disabled tanks back. This enables the combat crew to rest and enter the battle without having experienced the fatigue of an administrative march. Tanks have a removable idler and carry a few spare links which enable them to carry on in an emergency.

It is of particular interest that throughout the German army the weakest are made to help the strongest rather than the strongest required to take care of the weakest.

*Major Ahee accompanied Major Lodge to Africa last summer.

The German Map Reference

THE Germans have a map-reference system which they call "stosslinie," which means "thrust point." A line is drawn on a map. Theoretically, it may run in any direction, but in practice it is found to run either in the direction of the German intended advance or down the axis of a reconnaissance unit.

The line begins at a fixed point and continues indefinitely in the required directons. For convenience it is usually divided into centimeters. To give a map reference, a perpendicular is dropped from the reference point to the thrust line. Measurements are then given from the starting point of the line to the point where the perpendicular cuts the thrust line; then along the perpendicular to the reference point. Since the point may lie on either side of the thrust line, the second figure has to be prefaced by either right or left as one looks toward the enemy.

A typical reference would be 12 right 3.5. The figures always are centimeters; therefore, the actual distance on the ground represented by each unit will *not* always be the same but will vary according to the scale of the map.

In order to make the code more secure, the following variations may occur:

1. The scale may start with an arbitrary figure; that is, the starting point may be called sixty instead of zero; so that our map reference would read 72 right 3.5.
2. Dummy figures are often used. By previous arrangement, it is agreed that the first, third, and fifth figure of any map reference will be dummies. The above map reference, for instance, might be given as 87329 right 83359.
3. Finally when more than one thrust line is being used, perhaps by a Corps or Army, they are numbered and map references begin with the number of the thrust line.

Instruments have been found that consist of a ruler in translucent material graduated in millimeters, with a shorter ruler similarly graduated fixed at right angles which slides up and down on the larger ruler.

Operators with practice can give references very quickly.

Armored Reconnaissance

*By Major General C. L. Scott**

EVERYONE knows that adequate security begins with long distance air and ground reconnaissance, and I cannot stress too strongly the need for the continuation of adequate security throughout all the stages of battle. In modern mobile warfare there is no line or well delineated front. Combat usually resolves itself into fighting by group, and each group needs protection for its front, flank and rear. This protection cannot be afforded by observation alone, but only by elements possessing some "punch."

In desert warfare the enemy is not confined to roads, and may approach from any direction. If the main body is to be given an hour's warning by its ground reconnaissance, it must be thrown out about thirty miles from the main force on a complete circle. The front to be covered therefore is equal to $2 \pi r = 188$ miles. Since observation in the desert is limited at most to about two miles and since vehicles should work in pairs, about 190 vehicles would be needed to give all around observation if they were operating alone. However, if air reconnaissance is added to this long distance ground reconnaissance, anyone can see that security becomes immeasurably more effective and that it is then possible to reduce and utilize better the available ground reconnaissance in all around security.

To attain adequate security it has always been an established principle in cavalry tactics to employ long distance reconnaissance, intermediate reconnaissance, and close-in security detachments. Since the advent of air it also has been the practice to tie in the long distance reconnaissance elements with air reconnaissance. This is sound procedure, necessary in any terrain, and more necessary in the desert than elsewhere. The lack of air reconnaissance working constantly with ground reconnaissance tied in on the same communication net and the lack of sufficient ground reconnaissance to throw out both long distance elements as well as intermediate patrols led to many surprise actions in the last Middle East Campaign.

In past wars, where mechanized and motorized ele-

*Formerly, Observer with British Army in North Africa. Now Commanding Armored Force Replacement Training Center.

A Nazi half-track armored observation car captured by the British. This car is so equipped that where speed over level terrain is desirable, the tractor tread can be raised and the tired wheels lowered to provide the traction.

Nazi reconnaissance vehicle captured in Lybia.

ments were not so predominant as today, it was possible to send out more mobile elements than the enemy's large units and main reconnaissance, and by the use of this mobility to avoid, sneak through, or go around hostile security screens. This superior mobility enabled the necessary information to be obtained and sent back in time to be useful. This was pure reconnaissance working on the principle "to see and not be seen." In this machine age where an enemy like Rommel throws out equally mobile stronger packets of all arms to execute security missions, and where his main elements are equally as mobile as opposing reconnaissance, it is apparent that *weak* reconnaissance can get nowhere on its mission against this much stronger opposition. On the other hand, on many occasions it will be overrun and destroyed before it can obtain any information of value. Also, on occasions in the desert, it was not even possible for weak reconnaissance to *pause* long enough to send in valuable information that had been collected, and it was not unusual to see light, long distance reconnaissance piling pell mell back on the main body just ahead of a strong surprise attack. In this day and age, long distance reconnaissance must be organized to *fight in execution of its mission,* to *fight for time to send information in,* and to *fight for time for the main body to properly utilize the information sent in.*

In all maneuvers and in all actions that I saw in active desert operations, the main body sooner or later closed up on its long distance reconnaissance, or the long distance reconnaissance fell back on the main body. When this action takes place, the mission of long distance reconnaissance resolves itself into a security mission involving the protection of the flanks and rear of the force it covers during the entire course of the ensuing battle. The failure to apply this principle and the failure to organize reconnaissance units possessing the necessary power to engage in combat against very strong and mobile opposition, and also the failure to tie this battle and security reconnaissance in with battle air reconnaissance, led to disastrous hostile attacks against the flank and rear of many larger units engaged in combat in the last desert campaign. In short, the mission of security during battle cannot be executed by weak reconnaissance, lacking air assistance and communications.

The purpose of the foregoing comments is to stress as forcibly as possible the need for strengthening our long distance reconnaissance units so that they may fight properly in the execution of their normal duty of re-

connaissance, and also in battle security for the unit with which they work. The reconnaissance units that I think best organized at this time to perform both these functions are the reconnaissance battalions included in the armored division. The present cavalry reconnaissance regiments need the addition of self-propelled mounts, more powerful self-propelled antitank guns, and also tanks in order to be a real factor in present day reconnaissance. This is not my opinion only, but also the opinion of many British reconnaissance officers with whom I talked in the desert.

Proposed additional reconnaissance means for large units are frequently disapproved on the grounds that too much *overhead* is being added for this purpose. With this statement I heartily agree, if and when these reconnaissance units are organized only to observe. However, when they are properly organized and equipped to fight first for information as they must now do, then to fight and delay while the main body makes use of the information sent in, and finally to take their place as strong security elements during the progress of battle, it is difficult to see how they can be classed as overhead or wasted strength. In fact, a long distance reconnaissance unit, organized only to observe, is not worth its salt, let alone the road space it consumes.

As to air units, the Germans have no such terminology as "observation aviation." This type of air unit is termed "reconnaissance aviation." In addition, it is organized and equipped with planes and armament to fight, to bomb, and to assist ground troops while executing its reconaissance missions. It also pays its way with more than the one mission of observation and fights if necessary to do that.

If we do not insist on having *air support in reconnaissance and combat,* and if we fail to tie our ground units into the picture with these air units, understand the use of air, talk the same language and train together, then we shall have overlooked the most important teamwork that modern means affords us.

Another important feature in company and organization training that should be stressed is *the effectiveness of .30 caliber fire against low-flying air attacks.* Every once in a while we read of planes being knocked down by this small arms fire as if by pure accident. German armored units carry many antiaircraft light machine guns and 20mm guns mounted on vehicles comparable to the .30 caliber and .50 caliber antiaircraft guns in the armored force units. British fliers told me such weapons in German units made air attacks under 5,000 feet extremely hazardous. The .30 caliber antiaircraft guns on our General Stuart tanks frequently knocked down German planes in the desert. In the use of such weapons by aimed fire the habitual mistake was a failure to take sufficient lead on the attacking plane. The best results were obtained when gunners, kept constantly on the alert behind each machine gun, put up a large volume of fire against attacking planes, well in front of them, with little attention to aim but with the idea of establishing a curtain of fire into which the planes would fly. Certainly the important points are: to carry all possible .30 caliber and .50 caliber weapons in armored units in position for use as antiaircraft guns; to keep gunners on the alert in firing positions; to fire and *fight back*—don't lay down and *quit* against these low flying attacks if you have anything at all with which to fight back! When on the march or in movement in scout cars, armored cars and tanks, the safest and best thing you can do when attacked by low-flying planes is to continue the march and employ all available weapons while in motion. This is the opinion of both fliers and armored organizations in Libya.

In our training of reconnaissance units and of armored and mechanized units, I feel that the organization commanders are overlooking the necessity for training the company and organization overhead in combat duties. Most of this specialist overhead, particularly in the company, go with organizations into battle. Usually they are mounted in combat vehicles and habitually they must fight to exist. This overhead in mobile warfare is in the same situation that the organization overhead of our cavalry was in the Punitive Expedition into Mexico; i.e., anyone that could not ride and fight was useless and was not even carried along with his organization. Therefore, we must suggest: "take" (F) specialists, such as company clerks, cooks, armorers and mechanics out of the orderly room, store room and garages and teach them their principal combat duties—to drive and fight—or else in battle they will be millstones around the neck of their organization.

Most properly we stress *offensive action.* It cannot begin too soon in any engagement. Ability to act offensively is now highly important and necessary in the execution of up-to-date, long distance reconnaissance missions which eventually and logically merge into the protection of the flanks and rear of larger units throughout the important phases of battle. Surely we can organize and train *too many specialists* for combat units and too many units for special purposes, unless we also train and equip them to fight and to act offensively. We'll never win the war by observation alone or by units organized only to observe—but by fighting units that can both observe and do some killing.

New German Vehicles

AMONG enemy vehicles recently captured on the Russian Front is this half-trackcycle which carries a crew of three and can operate over most types of country, particularly marshy, muddy areas as demonstrated here. It is driven by motorcycle handle bars, but in place of the rear wheel has tracks of the armored-car type. It also has a tank-like body and is equipped with cannon and machine guns, which are operated by the two members of the crew carried in the rear.

Another new Nazi vehicle is the battle wagon shown below. Well armored, it is designed for fighting as well as for transporting troops. The caterpillar treads used on regular wheels are another innovation made necessary by Russian mud.

German Cavalry in the Russian Campaign.

Member of Nazi reconnaissance unit in destroyed village on Russian Front.

Cavalry In the Polish Campaign

(Lessons from the German Cavalry School)

By Lieutenant Colonel Emilio L. De Letona, Spanish Army

EDITOR'S NOTE: *The material presented here is reprinted from an article entitled "Mechanized Cavalry," written after a visit by the author to the German Cavalry School, and published in* Ejercito, *Spanish military magazine. There is no doubt that Colonel Letona was impressed with the fact that the Germans stress the importance of close coöperation between their mechanized and horse units.*

In 1940 the German army was reliably reported to have had approximately 791,100 horses (not including supply columns). Of this number 18,300 were cavalry.

THE first World War—a war of the trenches with continuous wasting and emaciation broke the morale of the troops and decreased the methods of attack. In the whole four years of fighting the means of offensive benefited no one in obtaining a decisive termination. This caused all nations to react violently against the static form of this kind of war—a war of positions, a war in which none of those principles were held to be of importance (which are indeed of great importance and which truly constitute the Art of War); that is, the movement and rapidity which bring the reason for conflict to clear and brief terms. By this means a war is brought to a rapid decision.

The quickness of movement necessitated by modern war has acquired an enormous importance, and this is one of the reasons why all countries have replaced part of their horse cavalry with mechanized. There is no doubt that speed is an important factor. Naturally, it is not possible to compare competently the speed of the horse to the speed of the motor. *Such comparison is wrong.* It must also be considered that the value of arms does not rest in speed alone, but in the coördination of all arms in the many phases of combat.

In the present war—a war of movement, in which speed is a principal and sometimes a decisive factor—on many occasions a proper amount of horse cavalry, by intervening at the right time, will produce great gaps in the flanks of the large units in movement and in the intervals between them. *This offers a broad field of operation for the horse cavalry.*

General Guderian, Chief of the German Armored Forces, says, "In these days armies must use horses and motors. If one prefers the motor, this is limited by the production of combustible fuel in one's own country." This authority gives strength to our statement that while it may be necessary to have mechanized cavalry, it does not follow that horse cavalry must cease to exist.

Mechanization cannot be effective in Spain by simply imitating the actions of a foreign country, because we must consider the various geographic aspects of the land, the network of lines of communication, the progress of the national motors industry, the vital question of fuel, etc.

"We must realize that France needed more than 15,000,000 tons of petroleum per war year, and that Germany needed 25,000,000 tons. One offensive like the Polish Campaign used 1,000,000 tons, and the amount of combustible fuel used in the German offensive against Belgium, Holland and France totaled 1,000,000 tons weekly."[1]

The Polish Campaign was won by the employment of motors because of little or no efficiency on the part of the Polish cavalry, who served no definite purpose in the action, who showed very poor management and employment, and who took no advantage of the opportunities that presented themselves.

According to information published in *Ejercito* and other articles on the same subject, the Polish cavalry had many opportunities to distinguish itself if it had had the boldness of spirit and decision characteristic of all cavalry. We mention one of these occasions to prove our point. For 48 hours a group of German tanks, by cannon and machine gun fire, maintained an established bridgehead against the attack of the Polish cavalry who were unable to dislodge them because of lack of decisive action; the tactical situation was gravely compromised since no German infantry were available to defend the occupied territory. If this cavalry—with the spirit of attack and boldness proper to the arm—had taken this bridgehead defended by a group of tanks (which they might very well have done, since the Germans them-

[1] *Ejercito*, July, 1941.

A German tank regiment advancing through Poland.

selves admitted the seriousness of the situation) great praise would have been accorded to the horse cavalry.

According to an article printed in another issue of *Ejercito* referring to the Polish Campaign, if the Polish cavalry had thrown itself in an all-out assault against the flanks of the German army in march and had penetrated without fear into the breaches among it, the cutting of communications, the destruction of the convoys, and the impossibility of the German rear guard to survive, would have well repaid them for their boldness. This should have been done, not only because this was their mission but also because they were encircled. Moreover, they were certain of the support of the civilian population, which would have permitted them to live in the occupied country—an impossibility for the mechanized formations. The result of some of the battles might have been very different from what they were.

During the month of June* we were in Germany as a part of the Spanish Military Mission and while there visited the Cavalry School at Chemitz. After the presentation of a brilliant exhibition by the *Equipo Internacional de Saltos* (Horsemanship Team), which showed the results of training and discipline in this school, there followed a conference with the Lieutenant Colonel Directors of the school concerning the Polish Campaign and the lessons to be learned from it relative to the use of cavalry. Prior to the Polish Campaign, Germany had in East Prussia one brigade of independent cavalry and three additional regiments of cavalry. Each regiment had nine squadrons of sabers and one of machine guns. In that campaign the German horse cavalry, provided with modern arms, demonstrated its efficiency and was decorated for its brilliant action. The natural terrain of Poland necessitated marches not only by roads but also across country and was very appropriate for their horse cavalry, which were often able to reach their point of combat in a more satisfactory manner than the mechanized forces. The advantage of the horse cavalry lay in its greater quickness of movements.

The great results obtained, thanks to the motor, in the campaigns in Poland, Belgium, Holland and France have given rise to the idea that horse cavalry is a part of history and has lost the importance that it used to have; but after a bit of thought one can readily see precisely why mechanization has acquired its exceptional importance.

By the measure of its own efficiency, in the same manner, will horse cavalry add to the mechanized units.

The assigned missions of exploration and security, liaison, reconnaissance, and the exploitations and proper culmination of the issue (characteristic missions of horse cavalry) are the same as those of the mechanized forces. This arm has very definite duties, and because of the evolutions and progress of the times, the motor has acquired a great importance in modern war where speed is essential. The present missions of the mechanized cavalry are the traditional duties of all cavalry, and it is self evident that the officers of that arm who

*Presumably, 1941, just prior to the German attack on Russia.

possess the cavalry spirit, accustomed to boldness and initiative, should also carry on in the duties of the mechanized units.

In the German Cavalry School, we have seen different types of mechanized cavalry which, together with motorized squadrons, coöperate closely with large units of horse cavalry. Each motorized squad is composed of 4 motorcycles in the following manner:

1st Motorcycle, tripod with antiaircraft dispositions and munitions.

2d Motorcycle, a machine gun emplaced in the interior of the sidecar, so situated to fire forward with accompanying ammunition, a total of 3,500 rounds per machine gun.

The 3d and 4th motorcycles, the same as the 1st and 2d. In each motorcycle are three soldiers, two on the motorcycle, one in the sidecar.

We saw the following types of vehicles:

1. Light armored reconnaissance car, with 1 machine gun. Radius of action, 350 kms.

2. Car with radio. 1 machine gun. Radius of action of radio, 100 kms.

3. Armored car, 20 cm. cannon and 1 machine gun. 250 rounds for the cannon and 1,000 for the machine gun.

b. Six-wheeled car. Radius of action 100 to 200 kms. 20 cm. cannon and 1 machine gun, weight 8 tons. Speed on good roads, 60 to 80 kms. per hour.

5. Eight-wheeled car. Same armament as above. Radius of action 300 kms. Speed 80 to 100 kms. Two drivers, one on either side. Weight 8½ tons.

6. Car same as above with radio. The armor of all cars is proof against rifle and machine gun fire.

General Guderian affirmed that the tactics and methods of operation of the armored car (mechanized) units are based upon the traditions of the better doctrine of the cavalry, and this is the same opinion that we heard advanced in Germany by the Chief of the German Cavalry School.

There is no doubt that in this mobile modern war, mechanization of cavalry is necessary, but this does not do away with the horse cavalry in any other country or in our own—for in dangerous country, mountains, woods, or terrain cut by rivers, horse cavalry can always move more easily; and the sphere of operations will always dictate the type of units to be used in order to achieve the best results.

To recapitulate: There is no doubt but that it is necessary to mechanize part of the cavalry, but it is also necessary to retain horse cavalry units, for only through a wise use of both of these, will we reach a goal of harmony and efficiency.

The best proof of what we say is that Germany, who, before the Polish Campaign relied alone on one brigade of independent cavalry in East Prussia, at the conclusion of this campaign, transformed this brigade into a division; for while there was need of mechanized elements to be sure, at the same time they increased the number of their horses.

Horse cavalry and mechanized cavalry will always be but one cavalry, for they both have missions and both must possess that which constitutes the most precious attribute of the cavalry—the traditional spirit of the cavalryman.

A Nazi cavalry patrol on reconnaissance near hostile territory.

German mechanized units being pulled through water and marshes with the aid of cavalry horses.

General Hawkins' Notes

IN the *Washington Post* of Sunday, October 11, 1942, appears an article by Marshall Andrews containing very reasonable and convincing answers to the assertions made by certain air extremists to the effect that air power alone can win victory in this war, or that in warfare only air force will be of any great importance.

In view of what has already happened in this war it seems extraordinary that there should be any need for such an article as that referred to. But there are thousands of persons in this country who want to believe that all we need is air power. Of course, no well balanced, clear thinking student of warfare will subscribe to such an idea. The Douhét theory that bombing of cities and industrial plants will conquer a nation has already been proved false as Marshall Andrews clearly explains.

As dominant factors in war, machines come and go. They have their day—their triumphs. In time, defenses against them are contrived, and they lose their relative importance. It is for this reason that the fighting soldier or sailor will always be the most important element in warfare, no matter what weapons happen for the moment to be the most useful. The vehicles or machines which carry these warriors on land, sea, or in the air, will vary with each war and will serve only as means of transportation for fighting men. These remarks are not intended to disparage air force or armored force (or indeed any other arm of the service) or to belittle the tremendous importance of these newly established mechanized forces in this present war. But it is believed that the tendency of people today is to attach more importance to machines than to the men who ride in them, and to assign more credit, praise and romance to the men who fight in them than to those who fight not as crews but as individuals on the ground.

It is a mistake to say that airplanes or tanks are weapons. They, like warships, simply carry the warriors and their weapons and give a certain protection to the men by means of their armor and their speed. As in the case of armored warships, the men in them can do their fighting while remaining in them. As carriers, they can put the fighting men in advantageous positions, overhead, at sea, or at close quarters to the enemy on the ground, and thus enable the men to use their weapons most effectively. The weapons are the guns, bombs, torpedoes, and the knives, spears or bayonets, as each of these comes within its own range for use against the personnel of the enemy.

As these carriers become more and more vulnerable to the new weapons of the future, they will have to be discarded or greatly modified before they can continue to carry fighting men into battle.

Furthermore, neither bombardments from artillery nor bombings from airplanes have yet been able alone to defeat armies on the ground. Such attacks are successful only when the fighting men of the enemy are confined in tanks, airplanes or ships. They may then be destroyed by shells and bombs as their carriers are destroyed. But when the fighting men are on the ground in dispersed order and each on his own legs, they can be beaten only by other fighting men similarly placed. Shells and bombs assist, and assist greatly, their own fighting men but they cannot do the job alone. There are local exceptions of course.

It is for these reasons that the infantry, in the last analysis, is the only permanent branch of the fighting forces. The infantry is mostly composed, not of crews confined in ships or airplanes or tanks, nor of crews serving a single weapon like a cannon, but rather of individual fighting men, each with his own weapon, and each capable of separating himself from the others so as to avoid making good targets for enemy weapons. Each man fights his own battle, but all these fighters are organized into groups for control and coöperation. In attack, the infantryman seeks to come to close quarters with the enemy; in defense, he tries to hold the enemy off as far as possible. This individuality is the permanently distinguishing characteristic of the infantry.

Even in the navy of bygone times, battles were concluded by the attack of individual warriors who boarded the enemy ships. Now they fight as artillery at long ranges. With the advent of bombs and torpedoes dropped from the air, even this naval characteristic is changing. However, when weapons are contrived to render airplanes more vulnerable as carriers of fighting men, the navy will go back to fighting almost entirely in ships.

As for armored ground forces, or tanks, antitank weapons are already developing which will eventually render tanks so vulnerable to fire that it will become impracticable to use them to carry men into battle except when they are closely supported by the infantry.

There is no doubt that these branches of the fighting forces which were last developed by mechanical inventions and innovations for warfare, and thus dominate the theaters of war for the moment, will be the first to lose their present importance and will decline relatively in comparison with older and long tested branches of the service which are built on more basic and less complex principles. But they will not disappear entirely.

To epitomize, complex machines provide swift carriers to carry warriors into battle, but as they become too vulnerable to new weapons their use as carriers for fighting men in battle will become more and more limited, and the men must return to the less complex

and more simple method of fighting on their own legs.

Even today, the present war has already proved that infantry is a basic arm never to be displaced entirely, and that victory can never be won without it, even though the newer branches are now indispensable. No one *can* believe that we can win this war without airplanes and tanks, but no one *should* believe that these new branches can win it alone.

Now, as a cavalryman, my faith in that arm is partially based on that same characteristic which is found in the infantry. That is to say, it is composed principally of individual fighters each in control of and responsible for his own weapon. The cavalry branch is a group of individual horsemen armed for fighting on foot or on horseback as the situation may demand. Like the infantrymen, the cavalrymen can turn their hands to any useful service, and change their weapons as may be desirable or necessary. They have that basic quality of enduring usefulness which any group of individual warriors will always have. They differ from the infantry only because they use horses to give them greater cross-country mobility. And in order to preserve that mobility they sacrifice some qualities possessed by infantry such as suitability for prolonged battle. But working with infantry, they can supply certain needs of the infantry such as mobile covering forces and security patrolling, linking forces together and protecting flanks, assisting the infantry in withdrawals and by delaying actions, linking them to armored forces and motorized troops, and finally in an all out participation with the infantry in battle and pursuit.

In addition, cavalry is useful as a specialized infantry in some independent operations. Cavalry is useful in some guerrilla-like operations. *Its missions are not the same as those of armored forces and should not be confused with such missions.* The necessity for large masses of infantry has been demonstrated in this war, as before said; large numbers of infantry need large numbers of cavalry as the closest coöperating partner. The cooperation of cavalry with armored and mechanized forces, when cross-country operations are necessary, has been mentioned many times in these Notes. The basic arms, composed of warriors fighting individually, but organized in groups for control, are often needed to help out the newer branches which are so dependent upon motor vehicles.

Air Power Alone Cannot Achieve Victory*

By Major General of Aviation Zhuravlev

RECENTLY the British and American press has been intensely debating the prospects of war in the air. Alongside articles soberly appraising the part played by the air force in modern warfare appear others devoid of all sense of measure and reality.

Some military authors attempt to prove that aviation is the sole force capable of achieving victory in modern warfare and that blows from the air can take the place of offensive operations of land troops. Referring in this connection to the well-known doctrine of Douhet, it must be pointed out that the military doctrines of the largest world powers differ vastly from Douhet's ideas and are based on the principle that the issue of war is decided by armies of many millions of men equipped with land as well as with air arms.

The basic force in war is the land army. The air force itself is organized in such a manner that it can accomplish its tasks not independently of the land forces, but in coördination with them. This tendency is consistently followed by all armies. When Douhet evolved his doctrine, he could not draw upon the experience of war, but arrived at his conclusions only by logical deduction.

But it is absolutely incomprehensible that this doctrine, buried long ago by the actual course of development of the armed forces of all countries and by the war experience of recent years, can now be revived. The experience of the present war has proven in a sufficiently convincing manner that the outcome of campaigns and even of wars depends upon the correct application of all the armed forces of a country and not of any one arm. The air force can do much, but without land troops it is not only incapable of achieving full victory on a given front, but even of establishing such a front.

The battle for England refuted the calculations of Douhet's following. The experience of recent battles has also proved that with skilful and stubborn resistance in the air and on land, a numerically superior enemy air force cannot decide the outcome even of separate engagements. Stalingrad is proof of this. In order to break the resistance of the defenders of Stalingrad, the Germans hurled enormous aerial forces against the city. On some days the number of flights of the German air force reached 2,000. The city underwent bombardments which aggregately equalled not only the raid of 3,000 bombers of which Douhet spoke, but three times 3,000 planes. Yet this failed to break the defense of Stalingrad or to determine the issue of engagements even in so limited a sector of the front.

It is high time to discard these retrograde theories which have long outlived themselves and have been refuted by the experience of the present war. *Victory over the common enemy can be achieved only by powerful blows of all armed forces on land, in the air and on the sea.*

*Moscow, October 11, *Krasnaia Zvezda.*

Italian cavalry advancing toward the front near the Don River in the late summer, 1942.

Cavalry in the Don River Region

Soviet cavalry unit moves up on the Southwestern Front, August, 1942. Cavalry detachments and Cossacks are playing a prominent part in the fighting in that area and have done much to stem the Axis tide toward the Caucasus oil fields.

HEADQUARTERS

ARMY GROUND FORCES

OFFICE OF THE COMMANDING GENERAL

ARMY WAR COLLEGE

WASHINGTON, D. C.

To the Officers, Warrant Officers, and Enlisted Men
of the Army Ground Forces:

Our second war Christmas is near.

Our first year of war has seen many of the Ground Forces complete home training and move overseas. Many more will join them in 1943.

For those of you who are new in the Army and only just breaking home ties, I ask the friendly and wise help of your more experienced comrades. Thus you will learn the stern duties of the soldier quickly and well, and may appreciate both the privilege and the responsibility of serving your Country in its hour of need.

To the older soldiers, I send a plea for an all-out, unceasing effort in training. It will pay richly on the battlefield, bringing success to our arms and enhancing your own chances of returning home.

To the officers who are building our war army, your first duty is to make yourselves fit by study and training to command the finest soldiers in the world. Lead your men by your own example, by training them thoroughly and wisely, by instilling high ideals of discipline, and by your concern for their comfort and welfare.

To you all, my deepest thanks for your devotion and fine accomplishments during the past year. If the holiday season may not bring you the joys of former years, may your feelings be of satisfaction for duty well done, and of firm resolve for the critical days ahead.

My own humble appreciation of so fine a command.

L. J. McNAIR,

L. J. McNair

Lieutenant General, U.S.A.
Commanding.

Editorial Comment

Peace on Earth

One year ago, just before Christmas, this nation was stunned by a terrific blow. Pearl Harbor was attacked by the Japanese while their diplomatic emissaries were still in Washington discussing negotiations to prevent a war between Japan and the United States. "Peace on earth, good will toward men!" What a mockery those words became. Revenge, hate, distrust, reprisal toward the Axis, took their place in our hearts.

The material damage caused by the Japs at Pearl Harbor was insignificant in comparison with the resultant effect on the American people. A nation of people with previously divergent opinions and political squabbles, rife with personal animosity, were changed overnight into a nation of people united in purpose and cemented together by a determination to win this war.

In going from peace to war it would seem that we in America have forgotten about the spirit of Christmas, that as a nation we have become so thoroughly engrossed in our armed forces and in the manufacture of guns, tanks, and planes that there is no longer any room in our souls for thoughts connected with the Christmas season.

No, we have not forgotten. We shall never forget. We fight for those principles upon which our nation was founded and upon which it has been maintained; fight that those principles may be carried down through the ages; fight that the opportunities of life, happiness, and freedom may be given to future generations. The symbols exemplified by the Christmas Season are kept alive by the very fact that they are included in the principles for which we are fighting.

So—

To every member of the Armed Forces, we send Greetings of the Christmas Season. May you never lose faith in your God or your country. It is that faith which can bring to us a just victory, and to the whole world, "Peace on earth, good will toward men."

Ambitions Crumble in Dust

The other day, according to Rome Radio, Mussolini visited the grave of Garibaldi, Italian Liberator and Poet, on the Island of Caprera.

Was Mussolini's air of bravado sufficient to hide quaking in his heart? Did he not fear that from the supernatural silence of the tomb Garibaldi would rise before him, point an accusing finger, and repeat his famous panegyric:

> "England is a great and powerful Nation, foremost in human progress, enemy to despotism, friend of the oppressed; and if ever England should be so circumstanced as to require the help of an ally, cursed be the Italian who would not step forward with me in her defence."

For Mussolini has cast to the winds, not only all that he had built up, but all that Garibaldi had built up. In the years before military ambitions, and visions of territorial conquests had blinded his other senses, Mussolini had rendered illustrious service to the Italian Nation, and the Italian People. The Nation's economic ressurrection was one of his most splendid achievements.

But then followed his affiliation with Hitler, whose malign influence is like a withering gust on a desert plain, destroying all that is true and noble in mind and body. The evil in Hitler permeated Mussolini, and one terrible aspect of the wreckage is that the Italian People, once a People of Love, Laughter and Song, have been dragged from their happy homes, to furnace the charnel house of the mighty Axis War Machine.

And so today, the Italian People, without means of their own rescue, are just pawns in Hitler's vast bid for world domination. Mussolini has sold them to the Common Enemy, just as he has sold himself, for his pretence of dictatorial powers, in the running of the Axis War Machine, is just a bluff—a cloak that will be rudely torn from him at the first moment that it suits his Boss, Hitler, the real oppressor of the Italian People.

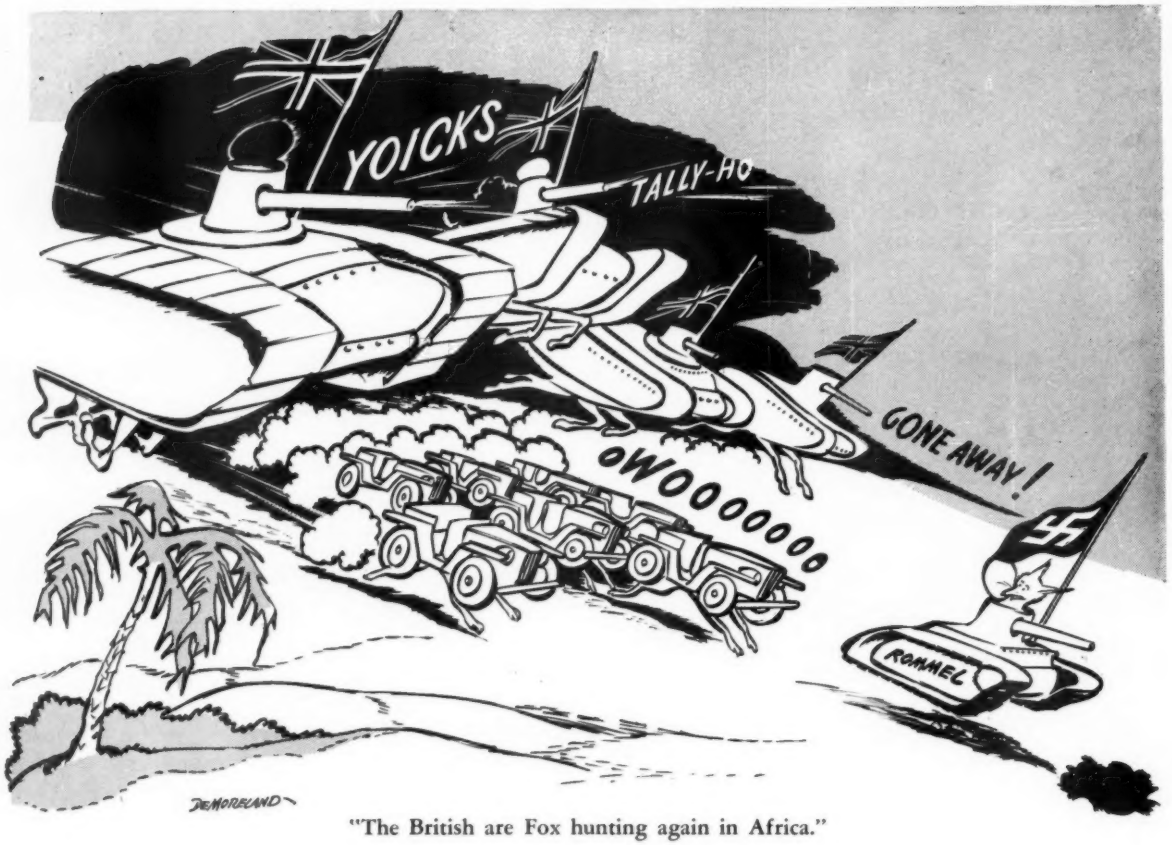
Hitler's whole life has been marked as one of betrayal of his best friends—even of those who placed him in power, and conserved his position in power. And in these great betrayals, he has left a trail of death, as guns barked a crescendo to each purge.

And it is to this sinister figure that Italy, at the behest of Mussolini, has entrusted its destinies. Mussolini, it is clear, always held Hitler suspect, but at the time France lay prostrate and dying, under the Hitler heel, Mussolini could no longer restrain his jackal instincts, and entered the war. His hopes of a greater Empire, however, have fallen by the wayside, and the Empire that Italy once proudly proclaimed is now vested in others—one-third to Hitler, one-third to the Emperor of Abyssinia, and one-third to Britain.—*"Reveille"*—Sydney, Australia.

Annual Meeting

The annual meeting of the United States Cavalry Association will be held at the Army and Navy Club, Washington, D. C., at 8:00 PM, Monday, January 25, 1943.

Formal notification, together with proxy cards, will be sent to all active members of the Association within the continental limits of the United States. Several im-



"The British are Fox hunting again in Africa."

portant questions regarding policy, organization, and possible constitutional amendments will be discussed, and it is urged that all members who are stationed in the vicinity of Washington be present. Members who will be unable to attend are requested to return the proxy cards promptly to the Secretary, U. S. Cavalry Association, 1719 K Street, N.W., Washington, D. C.

Active members of the Cavalry Association are officers of the Cavalry Arm—Regular Army, Reserve, or National Guard. Organizations, civilians, noncommissioned officers, and officers of other arms may become associate members of the Cavalry Association without the privilege of voting.

* * *

Planning Ahead

A need for horse cavalry seems to be presenting itself in India where the enemy might be looked upon as a menace. The whole east coastline from Ceylon to the delta of the Ganges will undoubtedly be requiring constant patrol. The northeast corner will also be menaced. In this country this same cavalry can be called into the advances which will ultimately be made when the Japanese are on the retreat.

Both India and Australia have certain supplies of native horses, their number is not known, but they have long been known for their cavalry and for their horses. This would lead us to believe that it would not be impossible to mount troops, sent over ready to go into action, even if their mounts could not reach these shores at the present time.

Constantly before our minds must be the eventual phase of the enemy on the run. When this time comes, it is more than probable that there will be much terrain where the horsed cavalry will not only be of advantage, but even necessary, in order to perform reconnaissance work and maintain contact with the retreating enemy.

It is within the bounds of possibility that we may come to a point where a great coördinated drive may be made by the British of India, the Chinese and the American expeditionary forces on the same front. Then by an army coming up from the south from the Egyptian front, the whole drive might be a joint Russian-British-Chinese-Australian-African-American-Indian Army drive on Europe, with its objective to sweep down on the Germans and the Italians from the west, which would allow of the army now in England making their landing on the Continent.

The air is full of rumors, regulations on animal transport, nothing definite, nothing given out. General Stillwell needs planes and cavalry to work in cohoots on reconnaissance; General MacArthur needs planes and cavalry and so on. Remember there are places where cavalry is necessary, maybe we and our allies have not

reached there yet, other than as defensive units; maybe we have been driven from some of them, where had cavalry been there, it would have been a different tale, Burma for instance.

There is much in the air for the mounted cavalry, where there is smoke there is fire.—*The Chronicle.*

Faith

Tobruk back in Allied hands—it's like England hearing church bells ring again after two years without a church bell.

Tobruk back in Allied hands is a reminder that war is more than planes and guns. It's what a tiny band of men clung to so desperately holding out for 186 days after all of Hitler's dive bombers—what men held fast to in their hearts even after it was lost again. It's what men and women on Malta believed in holding out in all of their agony, and now coming back to avenge it all. It's what men must have held fast to at Dunkirk when England's last ship rushed in to share in bitter humiliation and defeat only to come back in a proud and giant armada of 850 ships sailing to Africa.

It's what men like Alexander hammering Rommel, and Anderson now marching toward, must have felt on that day at Dunkirk when they shook hands and promised each other in all that rubble and ruin of Dunkirk—*"We are coming back"*—while Hitler prepared to fly to London. It's one weapon that Hitler cannot build and Germany can never have—*faith*—when everything goes wrong.

It's MacArthur saying farewell to men who fought and bled at Bataan and watching Japan move in and pressing General Wainwright's hand saying—*"We'll be back."* It's Stillwell coming out of Burma, hammered, hurt, beaten—he and a gallant little army crying, "For God's sake, give us planes"—and Stillwell pledging his word—*"We are going back."* It's Cordell Hull holding fast to his plan when all about him men were shouting and complaining—Hull holding fast to his plan to fool Hitler and Laval in Vichy until the blow was struck.

It's what men on Guadalcanal hang on to so fiercely against all of Japan's might and power and carved into a glorious stand. One weapon Hitler can never build —the faith a free man holds fast to when everything goes wrong. And now it's Tobruk again. It's what all decent men and women will feel again Sunday when church bells ring in England.

The famous Bow Bells won't be heard—Hitler's bombs destroyed all their heartwarming call to prayer. St. Paul's may not ring—their song was shattered by the Nazi bombs. Many a village church bell won't ring where the mark of Hitler's bombs have come—but if only one bell is heard in all of England, free men and decent men everywhere will hear it, and human hearts will be raised again by it's call. Men everywhere will understand it's promise. Bells which were to signal Hitler's invasion now peal out all of man's faith—as solemn and happy an hour as men have ever known.—Gabriel Heatter, November 14, 1942.

"Three Blind Mice"

As we come to the end of our first year's participation in this war, the effect of our armed forces is beginning to be felt by the "three blind mice"—Hitler, Mussolini, and Hirohito (our apologies to the rodent family). "See how they run!" Not very far yet to be sure; there is always plenty of fight left in a rat even when he is cornered, and we cannot afford to turn our backs on them in overconfidence. It is always a very difficult job to get rid of vermin.

The instigators of the "New Order" have proven that their tenets have no place in a civilized and peace-loving world. They have practiced the theory that it is better to take than to give, but never for a minute have they allowed the *people* to forget the spirit of *giving to the state*. No indeed. At first there were a few citizens within the Reich who failed to grasp the "New Order" idea, but Goebbels and Goering soon altered such an embarrassing situation by allowing the Gestapo a free and persuasive hand, which their Axis partners quickly emulated. Now the German, Italian, and Japanese people have been hoodwinked into giving everything that they had—including their freedom.

The "New Order" practices the theory that the people exist solely for exploitation by the state and the state, for exploitation by three greedy rats and their contaminated henchmen.

Mussolini and Hirohito have become so blinded by the lust for larger domains that they have sold the peoples of Italy and Japan lock, stock and barrel down the river to Hitler. Now the perfidious Italian braggart has been so dominated by Hitler that he is reduced to a whimpering puppet. Hitler is still so blinded by the successes of his depredations and conquests that he continues to pretend that he can force the New Order down the throats of the civilized world.

The "three blind mice" are yet to be caught, but that they will be is our firm determination.

New Cavalry Journal Personnel

Master Sergeant Ledyard B. Clark has recently joined the staff of The Cavalry Journal. This new affiliation was made possible through the coöperation of Major John E. Coleman, Editor of *The Field Artillery Journal*, who allowed Sergeant Clark to be transferred to The Cavalry Journal. Sergeant Clark was graduated in 1940 from Harvard University, where he was Editor of *The Crimson*, the college daily, during his senior year. He will have charge of the circulation and assist editorially.

Mrs. Evelyn Drayton has been added to the administrative staff in charge of the Book Department. She will insure prompt attention and efficient service on all book orders. Watch our book reviews and ads, and let us help you with your Christmas orders!

German Miscalculations in 1942 Russian Campaign*

By Professor A. S. Yerusalimsky

A RECENT Berlin broadcast contained some very significant statements. We refer to Lieutenant General Dietmar's latest reviews of the operatons at Stalingrad and in the Caucasus. In August the Germans still expected triumphant reports from their command, but these have been long delayed. Weeks have passed. Winter is here and the reports are not yet available. "Everybody anxiously waits to learn when and how these battles will end," says General Dietmar. "One might say that time is holding its breath." And then Dietmar continues: "The difficulty of the task is obvious to everyone." To "everyone" means also to the German Command.

The Germans launched their summer offensive with the intention of taking the Volga stronghold by one violent thrust. It hurled here a tremendous army of over 1,000,000 men, more than 1,000 planes and large numbers of tanks. It planned by a violent thrust not only to capture the city but to smash the Red Army and thus force a decision in the Eastern campaign before winter. This attempt was accompanied by a big propaganda hullabaloo, repeating the same performance that took place in October, 1941, when Hitler proclaimed that the Soviet Union had "ceased to exist as a military factor in world policy."

At the beginning of their offensive at Stalingrad, the Germans stated that shortly the city would be taken by storm. Then they said that the city must be taken, as it is of decisive strategic importance. Having captured several streets, they stated that Stalingrad had been taken. Then, suddenly, they tried to convince the world that Stalingrad was of no great strategic importance.

These changes in the tenor and content of the Ger-

*Krasnaia Zvezda, Moscow.

ONE MISCALCULATION

General mud makes going tough for German soldiers in Russia.

DEFENDERS OF STALINGRAD

Red army troops travel from one part of bomb-shattered Stalingrad to another to bolster its defense.

man propaganda are very significant. They show that despite the seizure of considerable Soviet territory, the ultimate plans of the German Command in the 1942 campaign have been wrecked.

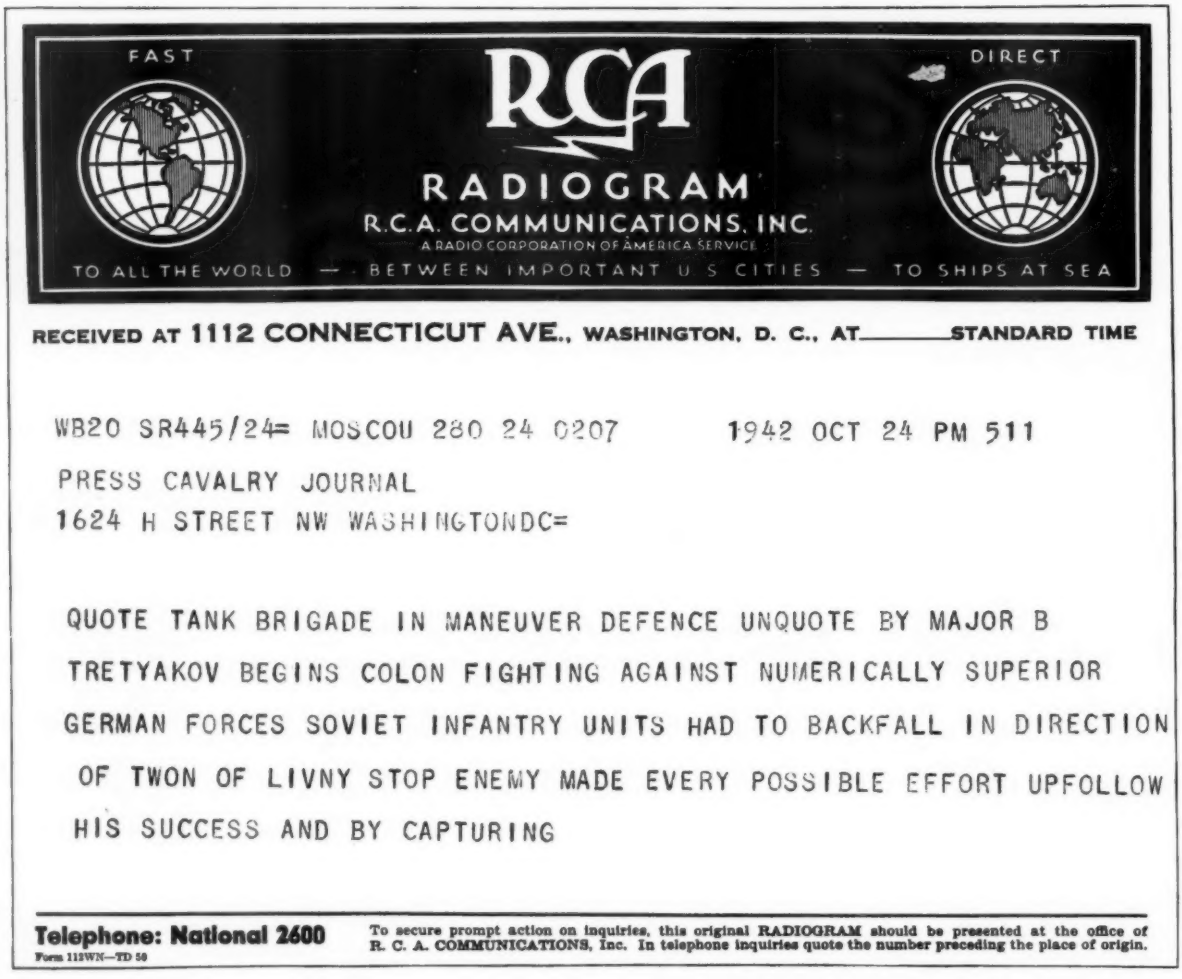
The history of wars knows many examples of fierce and stubborn battles for populated places. Such were the battles of Liege, Namur, and Maubege in the first World War. But none of them can compare with the battle of Stalingrad, with the heroism of the troops defending the city. "In the modern history of wars," Dietmar admits, "the fighting for Stalingrad stands out as an example of well-planned defense of a big city. The German troops have to fight for literally every yard of ground." General Dietmar, of course, prefers to remain silent as to the price the Germans have to pay for each yard. However, their losses in man power and in the rate of development of the campaign constitute the significant factor of the general military and international situation.

No less significance is attached by the world press to the fighting in the Caucasus. The Germans long since reported that by driving a wedge in the Stalingrad area they had cut the Soviet front in two, and thus could easily realize their plans for the conquest of the Caucasus.

In his latest review, General Dietmar tries to explain why the Germans have as yet failed to seize the Caucasus and consummate their far-reaching plans. Again he refers to the geographic and climatic factors hindering the German advance.

The Germans reported that the Red Army troops defending the Caucasus are cut off from sources of replenishments and cannot offer sustained and serious resistance. Now General Dietmar complains: "Our troops are experiencing no small difficulties, as the Russians hurled fresh reserves to this sector of the front. The tasks confronting the Germans and all troops fighting in the Caucasus," he complains further, "are very hard. Attacks are accompanied by alternating success. Whenever our troops cease to advance, it is the Bolsheviks who at once pass to the offensive."

In conclusion Dietmar says: "But the German Command does not intend to sacrifice men to speed up successes. It prefers to preserve its man power." This is something new. But this does not mean that the Germans have dropped their plans for seizing the Caucasus —on the contrary, fresh thrusts and drives may be expected. But Dietmar's complaints contain the admission of an incontrovertible fact—that Hitler's army is bleeding white, that Hitler's plan of routing the Red Army has collapsed and that the dreams of decisive successes in the East have been scattered to the winds.



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Tactical Training Data by Cable from Moscow

FOLLOWING are a series of articles on tank tactics written by officers of the Red Army and cabled direct to The Cavalry Journal by the War Department, USSR, Moscow. The above facsimile is the first of some fifty such pages that constituted Major Tretyakov's article, A Tank Brigade in Maneuver Defense, which begins on the opposite page. Following it are other articles, all of which contain valuable detailed material on methods of tank warfare learned from actual combat experience on the Soviet-German front.

Major Tretyakov's article describes the maneuvering of a tank brigade in defensive action and cites the vulnerability of *junction points*—areas at which one tank unit joins another.

Major Marlennikov's article, "Tank Counterattacks," analyzes successful methods of counterattacking enemy tank attacks, particularly when the enemy's flank is supported by self-propelled artillery.

In "Tactical Principles in Tank Battles," Colonel Kilomaytsev stresses the rôle of aviation in tank warfare —both for reconnaissance and for bombing. His emphasis on the need for constant and careful reconnaissance at all times is of particular interest in this issue because it represents a Soviet point of view coincident with General Scott's views based on observations in Libya.

"Tank-Mounted Riflemen," by Colonel Kononenko, deals primarily with tanks and infantry in close operation and cites examples in which tank landing parties (tank-mounted riflemen) have successfully thwarted the enemy and advanced the position of their own tanks.

Major Slosarov, in "Tank Tactics in the Mozdok Area," gives a brief summary—a "bird's-eye-view"—of tactical tank warfare.

These studies are of particular interest and value in view of the fact that they deal with actions as recent as the late summer of 1942 and are written by officers of an army that has combatted the Nazi panzers for more than seventeen months, and in that time has destroyed more men, machines and guns of the Axis horde than all other armies combined.

A Tank Brigade in Maneuver Defense

*By Major B. Tretyakov, Red Army**

DURING July of 1942 Soviet infantry units, fighting against numerically superior German forces, had to fall back in the direction of the town of Livny. The enemy then made every effort to follow up his success and capture Livny in order to insure a flank attack against Voronezh. The situation was very grave, and it was essential that the enemy be prevented from dealing a blow from south to north at the defense troops of the Red army. This task was assigned to one tank brigade.

The brigade headquarters were aware that as many as two regiments of Germany infantry, plus artillery and fifty tanks, had reached Krasny and that up to two hundred enemy tanks had broken through the first line of Soviet defense on the left flank of the division. Thus, the enemy seriously threatened the left flank of the area defended by the brigade. In view of this, the right flank of the Soviet infantry battalion had fallen back eastwards.

Both flanks of the brigade were menaced by enemy tanks, so they were concentrated for defense in two groups and placed at the flanks of the motorized infantry, which was the containing force. The two groups of Soviet tanks were assigned the areas to be defended by them and were informed of the direction that their counterattacks were to take. During the night the enemy carried out several active reconnaissance raids on some sectors of our defense and tried to locate the flanks of the brigade.

From information received by our intelligence during the day the nemy intentions had become clear, and in spite of the enemy's numerical superiority, the commanding officer of the tank brigade decided to hold the enemy on their present line until the arrival of our reserves.

The next day, supported by aircraft and artillery, the enemy launched fifteen attacks in an attempt to break the resistance of the brigade. Each time the enemy was repulsed by fire and counterattacks of tanks and driven back to his original line of departure. His frontal attacks were unsuccessful, so he concentrated his superior forces against the left flank of the area defended by the Soviet tank brigade and began to wedge into their defenses by advancing from the south along the railway line. The enemy was counterattacked by a group of tanks brought up from the rear and again had to return to its line of departure, while the Soviet tank brigade regained its defensive position. Meanwhile, adjoining units on the left flank retreated still farther to the east, and the brigade was left in a semicircle.

The enemy did not abandon hope of crushing the defense brigade, and his attacks became much more fierce. Soon he succeeded in wedging into the disposition of the brigade and to the rear of our containing group (motorized infantry). Further resistance in defense of the line held by this containing group might

*By radio direct to The CAVALRY JOURNAL from the Soviet War Department, U.S.S.R., October 24, 1942.

Russian tanks protecting flanks of motorized Infantry.

Soviet tanks going to the counterattack in the region of Vyazma.

have resulted in their annihilation; so to regain lost ground and to protect the withdrawal of the motorized infantry to the next line, two tank groups at our flanks counterattacked simultaneously. Thus, enemy troops who had wedged into our defenses were held in a vice in the depth of the combat formation of our brigade and were either destroyed or dispersed. This counterattack enabled our motorized infantry to retreat to another line.

Then the flank groups of tanks took up new defensive positions at the flanks of the motorized infantry. The combat formation was the same as before. By that time the adjoining infantry unit on our left flank had taken up a new defensive line. As a result of this fighting the enemy lost over a thousand officers and men, sixteen tanks, eighteen antitank guns, and two long-range guns.

In this particular instance the tanks were concentrated in two groups and carried out their tasks by means of active defense in counterattacking the enemy at his flanks while he was wedged into the depth of our combat formation. (Usual combat formation was changed and did not consist of the two groups echeloned in depth as usual.) The placing of two shock groups of tanks at the flanks of the containing groups of motorized infantry was dictated by the situation. If the flanks of the defending tank formation had been open, shock groups echeloned in depth would have had to protect the flanks and, in addition to this main task, defend the area occupied by them.

The same combat formation may be used in defense along a wide front when one shock group is insufficient to repulse the enemy attacks against defending flanks, as it would not be able to counterattack at both flanks of a wide front. Terrain may also necessitate a formation of two shock groups of tanks, particularly if there are obstacles impeding the maneuver of tank units along the front of a defense sector or in its depth.

Shock groups of tanks may be used to much advantage at the flanks of a containing group of motorized infantry, as they are likely to be in a position to take the enemy into a vice and make flank attacks without any regrouping. This can be successfully applied either when the enemy is wedged into our combat formation or when the enemy is attacking our first line of defense. The second echelon of defense, however, will be weakened if the tanks are divided into two groups. It is essential, therefore, that rapid concentration of tanks into a single shock group be ensured if such combat formation is adopted.

Of particular importance in the case cited was the timely withdrawal of the motorized infantry to a second line of defense; also the proper coördination of active operations of tanks with those of the withdrawing motorized infantry. This prevented the enemy from pursuing the withdrawing motorized infantry, and the latter had time to consolidate a new line of defense, while the enemy had to regroup and start preparation for a fresh attack.

At night the Germans made reconnaissance in force to locate the flanks of the Soviet brigade and brought up their fire resources to the region of the railroad station. The new line was not suitable for proper defense, inasmuch as buildings and an inhabited locality to the southwest of the station formed natural obstacles that impeded the maneuvering and fire by our tanks in front of the first line of defense and, at the same time, enabled the enemy to concentrate his forces without loss. For this reason a plan of operations provided for the further withdrawal of the brigade eastward to an area which was more advantageous. In this defensive area the brigade

could rest its flanks on the banks of a river and be well protected to the rear by the inhabited localities along the river bank. It could also make use of advantageous terrain for firing and maneuvering, both in front of and behind the first line of defense.

To give the rear installations time to withdraw it was decided to force the enemy to deploy into combat formation in front of the old line of defense and withdraw our units to the new defense area just before the beginning of the enemy attack, in order to make the enemy strike at an empty place.

In the morning the enemy opened concentrated fire at the area where he was expected to deploy and soon began active operations in an attempt to envelop the flanks of the brigade. As soon as the menace of being surrounded became real, the brigade promptly made a fighting retreat to the new defense area. At this stage of the fighting, defensive activity of the brigade was characterized by active counterattacks into the depth of the enemy combat formation for the purpose of disorganizing his regrouping. For instance, when the enemy was reported to be pressing our neighboring units on our right flank and bringing up reinforcements to his left flank in order to exploit the success, it was decided to frustrate the enemy plans by checking his progress.

Four medium and one heavy tank from the tank group at the left flank of our motorized infantry were detailed to attack the enemy column moving along the front in a northerly direction. Tanks of the right group were to support the counterattack of the left one if required. The left group maneuvered in rear of the defending motorized infantry, then made a surprise attack on the enemy column, and destroyed almost entirely as many as two companies of Germans, eleven antitank muskets, and thirteen guns of various caliber. Thus, the defending force frustrated the enemy intentions and checked his progress on our right flank by taking advantage of the regrouping of the enemy forces.

Nevertheless, having detected a weak spot in the line of our defenses somewhat to the west, the enemy began to press harder at this point with a view to breaking through in a northerly direction. The Soviet tank brigade was assigned the task of barring the way of the enemy after he maneuvered in rear of our defense. Carrying out this maneuver was made possible chiefly by previous counterattacks, which had checked the progress of the enemy and enabled the tank brigade to get away and regroup.

Under cover of darkness the brigade took up the assigned area. The front line defense was ten kilometers long, so the tanks were again divided into two groups and placed at the flanks of the motorized infantry, and all matériel was placed in trenches and camouflaged. Our infantry entrenched themselves along assigned lines, and by evening 4.7 were ready to offer stubborn resistance. Beginning from 5.7 the tank brigade retained its defensive area and parried all attempts of the enemy to break through our line and turn our flanks.

At this stage the tank brigade launched several counterattacks, most of which crossed the front line defense from behind the flanks of our motorized infantry. The enemy intentions were always discovered in time because of sustained all-round reconnaissance and well organized observation. The enemy concentrated up to two regiments of infantry with artillery, and tried to advance three separate times, but each time just before the attack one of our tank groups counterattacked his flank and threw him back to his original position.

In the afternoon when the enemy had exhausted himself in front of our first line of defense, the brigade

Russian tanks moving out of concealment to make a surprise attack on hostile columns.

launched a counterattack with all of its tanks. Having suffered heavy casualties in man power and matériel, the Germans gave up frontal attacks and began to withdraw in a westerly and north-westerly direction. Information gained by reconnaissance showed that they were concentrating a shock force against our right flank.

On the evening of July 6th the enemy concentrated up to two regiments of infantry with artillery and ten tanks with the intention of dealing a blow in the northerly direction. Under such conditions it was preferable to defeat the enemy piecemeal and frustrate his plans instead of waiting for his attack. Our right tank group, supported by fire of the left tank group and of the motorized infantry, attacked the enemy in one sector, and put him to flight, then withdrew to its line of departure and got ready to parry the attack from another direction. The enemy recovered, brought up his reserves, and again launched an attack. As a result of fierce fighting that lasted for four hours, the enemy succeeded in pushing our units back but suffered heavy losses, and the onslaught began to slacken.

The tank brigade commander then took advantage of the favorable situation and ordered an attack to advance on the enemy from the flank. The Germans sustained heavy losses and retreated in a southwesterly direction. In this particular case, the enemy was first exhausted in front of our first line of defense, then counterattacked when his combat formations were unable to parry the counterstroke.

One consideration should always be borne in mind, however; namely, such a flank attack might have proved a failure if the Germans had had reserves—particularly tank reserves—and had counterattacked our shock group of tanks from the flank. Consequently, when launching a flank counterattack along the front the attacker must always ensure protection of an open flank by artillery fire or by tank security detachments of antitank guns placed at the flank.

In mobile defense, counterattacks by an enemy prepared for the offensive will not be infrequent, but the antitank defense of the enemy as a rule is inadequately prepared, and his combat formations are not ready to repulse our counterattacks. In such cases, these latter must be of a decisive nature. Counterattacking tanks must wedge into the thick of the enemy, and if the enemy begins to withdraw, pursuit must not be carried too deep—must not exceed the range of artillery protecting our counterattacking tanks. If the counterattack is launched decisively by the whole of the combat formation, pursuit must be carried on until the enemy is completely annihilated. Such counterattacks should be launched on a wide front; otherwise, the enemy would be able to cut the counterattacking tank group from its infantry and artillery by means of flank counterattacks. Consequently, pursuit in a decisive counterattack should be undertaken by several tank formations. Such an operation, as a rule, should be prepared and carried out as carefully and as methodically as an offensive against an enemy that has been stayed.

As a rule, the enemy, first of all, tries to locate the flanks and the point of junction of our defending units by making use of all forms of reconnaissance, and after locating them he tries to strike there. If the enemy succeeds in wedging into our defenses he makes every possible effort to exploit his success by using all available resources even at the expense of weakening other sectors. At the same time, the enemy deals additional blows at one or several sectors, mainly to flanks or to the rear. Consequently, particular attention should be paid to defense *junction points*. Heavy cross fire of antitank and automatic weapons should be organized at these points, and, if the time permits and it is generally possible, they should be protected by landmines and obstacles against infantry attacks.

In the above instance, the activities of the tank brigade headquarters provided well for the protection of all points of junction in the defense, and that is why the enemy never succeeded in detecting our weak spots. Movement of reserves towards these points of junction or flanks menaced by the enemy, however, should be carried out in due time, so that the enemy should not be allowed to wedge in and consolidate his position. Otherwise, the operation of local reserves will be of no avail.

Enemy intentions should be discovered in time. To this end, all-round sustained reconnaissance should be carried out, particularly around points of junction. Such reconnaissance should be strong enough to penetrate sufficiently into the depth of the enemy area, and it must be assisted by observers at points of junction.

The commander of the unit of formation in a defending area is responsible for the defense of the point of junction. As a rule he is appointed by order in which the command must give instructions regarding the protection of the junction point and organization of cooperation between neighboring units, while headquarters must check on the execution of the order.

Meeting strong resistance at one point, the enemy would probably leave a protective force there and regroup his main forces for dealing a blow at another point. Therefore, the defender must understand the enemy maneuver by means of reconnaissance and observation in order to prepare beforehand for parrying the blow.

In defense, a tank formation should always be ready for any emergency. The commanding officer must organize his defense to enable shock groups of tanks to maneuver easily in depth of its combat formation and to parry enemy maneuver by counter maneuver of tanks and antitank weapons. This is the only way of thwarting the favorite method of the Hitlerite troops. Liaison and intercommunication are also of great importance for the success of any defense, and they must work well to ensure control of operations and maneuver.

German and Russian tanks in fierce combat.

Tank Counterattacks

By Major E. Marlennikov, Red Army

WHEN the Germans launch an offensive they mass their tanks in the direction of their main blow in order to drive a wedge in the defense zone and disrupt the defender's system of fire and control. To parry the tank counterattacks, they direct a heavy fire at the counterattacking tanks, and create an impression of well-aimed fire. When they succeed in halting the counterattacking tanks, they often leave a small panzer group of *braplip* (chiefly tanks of the T-4 type) to hold the adversary's tanks with frontal fire.

Meanwhile, the main body of panzers, under cover of this *braplip* group, is immediately regrouped for striking a blow at the flank or rear of the counterattacking tanks; therefore, counterattacking tanks must conduct ceaseless reconnaissance operations at the enemy's flanks to determine his plan of attack and to track down the group detailed for this enveloping maneuver.

At the same time, the group of defending tanks assigned to cover the frontal operations must conduct careful observation of the main tank forces of the enveloping enemy group. As soon as the blow is struck at the enemy's flank they must, in turn, move forward and attack the panzer holding force.

Another method employed by the enemy when he meets counterattacking tanks in offensive battle is to move a small group of panzers in front of the main tank forces, select a favorable position for opening fire from shelter, then immediately put up a smoke screen. This screen enables the main enemy tank force to reach a firing position, and as soon as the smoke screen lifts, all tanks open fire at the counterattacking group in an effort to disable it.

Should the counterattacking group begin to retreat, the whole enemy panzer force at once begins pursuit in an attempt to reach the flank of the retreating tanks. Such enemy tactics might succeed provided that the counterattacking tanks fail to conduct reconnaissance operations in front and on the flanks. Should the counterattacking group accurately estimate the enemy tactics in good time, it must immediately undertake to countermaneuver. While leaving a few tanks (preferably heavy ones) in front of the screened enemy panzers in order to hold them with frontal fire, the main tank force should choose firing positions on opposite slopes of elevations, preferably at the flanks. As soon as the enemy opens concentrated fire at the tanks left for hold-

Small groups of Soviet tanks attempt to hold hostile tanks while main force moves to flanks.

ing operations, the latter will do best to beat a retreat in order to lure the enemy tanks into pursuit and bring them under the flank fire from the main defending force.

Another possible maneuver, should conditions and terrain warrant, is that of leaving a small group (as recommended above) to hold the enemy main force, while the counterattacking tanks advance at high speed into an attack of the already spotted Nazi flank.

A counterattack must be resolute, with fire concentrated not only along the full length of the enemy line, but at some one of the most vulnerable points. This usually produces great moral effect, and causes the enemy to begin a retreat in order to regroup and attack in another direction. As soon as the enemy begins to regroup or withdraw from battle, the defending tanks must take advantage of this moment and, without ceasing fire, strike a blow in an attempt to cut the enemy formations and destroy the isolated groups of panzers which have lost contact with the main force.

When the enemy has superiority in tanks, *counterattacks with tanks must be avoided*, as in such a case it is best to use tanks for operations from ambush. Tank ambuscades must have sufficient depth; tanks must be placed in tank trenches, and they must be well camouflaged. Actual combat experience suggests the following method of attack from ambush: First, a group of tanks are detailed to lure the enemy. Then they maneuver over the battlefield, lay down a barrage in front of the advancing tanks, and roll back in an effort to bring the enemy within range of the ambush. As soon as the enemy panzers approach one of the ambushed groups, it suddenly opens fire over the open sights. This operation is best recommended to be carried out by an ambushed group situated on the flank of the enemy tanks. Sometimes, however, it is best to let the panzers pass and open fire at their rear.

Every crew must strive to disable the enemy tanks, and as soon as the traction of one is damaged, fire should be shifted immediately to a moving tank, since a tank brought to a standstill can no longer continue the attack, and its fire is not as dangerous.

When the enemy gives up the attack or begins to retreat or to regroup, the defending tanks in ambush must immediately attack, supported by fire from other ambushed tanks. Meanwhile, the maneuvering tanks attempt to strike a blow at the enemy flank or prevent his retreat. By coming upon ambuscades in this manner the enemy will be destroyed piecemeal.

For counterattacking in defensive action, as a rule, the enemy employs small groups of tanks either combined with infantry or used independently.

A counterattacking enemy panzer group used independently selects firing positions on opposite slopes of elevations, and as soon as the attacking Soviet tanks emerge at summits or elevated points, they are met immediately with massed well-aimed fire from the enemy tank guns; and the fire is maintained until the

advancing force gives up the attack. Thereupon the second and third echelons of advancing Soviet tanks must adapt themselves to the terrain and strike a flank blow in an attempt to penetrate to the rear of the counterattacking panzers. The first echelon stays behind for a frontal and holding operation. Then as soon as the enveloping group reaches the enemy flank, the first wave begins to push forward and pursues the enemy to a complete route. In a counterattack, it is important to reach a fixed line in good time, prevent the infantry from being cut off from the tanks, retain control of the battle, and operate strictly in accord with a plan synchronising all operation with other arms.

Whenever enemy panzers counterattack jointly with infantry, they ordinarily advance together, with the infantry usually in small groups. The attacking force may use the same method as outlined above, or, even better, penetrate the enemy rear in order to prevent the infantry from retreating and consequently destroy it.

When tanks attack with tank-borne troops, it is advisable to land these troops in the rear of the enemy infantry and detail a few tanks to support their operations, while the main tank force drives full speed forward in an attack on the enemy mortar and artillery positions, the last tank wave being followed by the infantry.

When tanks have penetrated enemy positions to a depth of six to seven kilometers, it is time to bring up the infantry and strike a blow to deepen the penetration. Ordinarily, after Soviet attacking tanks have effected a deep penetration, the enemy begins a hasty and frequently disorderly retreat to a second line of defense. The attacking force must immediately take advantage of this, because a few minutes delay might undo the success achieved; therefore, attackers—particularly tanks—must sweep resolutely forward and ruthlessly destroy the enemy man power. They must reach a new defense line right on the heels of the retreating enemy and give him no time to consolidate his position. Moreover, tanks must continually conduct reconnaissance operations in the front and on the flanks in order to warn of the approach of counterattacking reserves.

Enemy ambushed groups usually strike blows at the flank and rear of attacking tanks. Should the first tank echelon be subjected to such an attack, the second echelon destroys the ambushed panzers by attack from the rear or flank.

The Germans have time and again revised the tactics of their tank troops. At the beginning of the war, the enemy hurled large masses of tanks into battle in several echelons and infiltrated to the rear of Soviet forces with little regard for the danger of their infantry being cut off from the tanks. But Soviet commanders learned to smash the enemy tank columns and destroy their infantry; so the Germans revised their tactics and brought the infantry closer to the tank waves. Nevertheless, the enemy infantry has often been cut off by Soviet rifle units and prevented from taking advantage of the success scored by their tanks.

Having suffered tremendous losses in men and ma-

Tank-borne troops in mobile reserve preparing to mount.

chines, during their 1942 summer offensive in the south, the Germans have again changed their tactics. In an effort to prevent heavy losses and take advantage of the success of every individual massed tank blow, they have now interspersed tank formations with motorized infantry.

Each change in enemy tank-infantry tactics calls for a change in the method of struggle against them; but this requires knowledge of vulnerable spots in the enemy formations. By saturating his tank troops with motorized infantry, the enemy weakens his tank blow; and in this event, the defenders must again pursue the same old purpose—that of cutting off infantry.

The defenders must concentrate long-range artillery fire on the hostile armored vehicles, and when the enemy tanks reach a distance of one thousand meters from the main line of resistance, fire power must be directed at vehicles from antitank rifles, machine guns, and antitank guns. Artillery shifts point-blank fire at the enemy tanks, and as tanks draw nearer they must be met first with antitank gun fire and later with antitank rifle fire. Groups of tank destroyers at an advanced position of cover and troops at the main line of resistance must be charged with the task of destroying the enemy tanks at close range.

The enemy may capture the main line of resistance and bring up infantry which will try to capture the first line trenches and destroy the defenders. In such a situation the defenders must act boldly and resolutely even if the enemy tanks effect a deep penetration of defenses. Enemy infantry attacking dugouts and trenches in groups of ten to fifteen can easily be destroyed by fire from the trenches.

The second wave of enemy motorized infantry usually alights before it reaches the trenches—some two hundred to three hundred meters in front of the main line—then attacks in support of the first wave, and attempts to develop its success. This second infantry echelon is usually stronger than the first, and all means of fire used in close range fighting must be directed against it. Enemy tanks that have made a deep penetration of defenses and been cut off from the infantry must be destroyed by artillery fire and tank counterattacks.

It is advisable to have detachments of mineplanters in the district of the second defense line who can immediately begin to plant mines in the way of the enemy tanks that may break through. Upon encountering mine obstacles the enemy tanks, as a rule, cease the attack in this direction and either withdraw from the battle or begin to regroup.

On the Western Front, for example, the enemy recently resorted to the following offensive tactics:

First, the German tank echelon moved forward supported by self-propelled artillery at its flanks, which covered the flanks and supported the attackers against counterattacks. While moving on the flanks, the artillery was always ready to open positional fire during any counterattacks at the flanks and tie down the operations of the counterattacking Soviet tanks. Simultaneously, the German tanks began to penetrate the rear of the counterattacking group in an effort to destroy it. Meanwhile, the self-propelled artillery on the unattacked flank covered up the maneuver of its tanks from forward positions.

In this case it was important that the enemy action be well understood in order that proper countermeasures could be taken. The self-propelled enemy artillery advancing on the flank of the tank groups was easily distinguished before it reached our main line of resistance.

On the other hand, had the enemy forced a breach in our main line and pushed his attack on our rear, the most advisable method of counterattack would have been the following:

The counterattacking Soviet tank force would have been hurled rapidly in small groups at one of the enemy flanks and, after having selected a favorable firing position, it would have concentrated its fire at the vulnerable spots of the enemy tank formation. The main group would have been kept informed of the enemy operations. As soon as the enemy tank group had begun a flanking maneuver attack, then the Soviet tanks would have headed for the enemy's flank; and had he employed his self-propelled artillery to protect his flank, the main Soviet tank group would then have struck at the enemy's rear.

This battle formation of enemy tanks using self-propelled artillery on the flanks may also be employed in counterattacks. Conclusions drawn in the present article, however, must not become a stereotyped pattern for all operations of tank units. In deciding on one or another method of antitank warfare, it is necessary in every particular case to take into account the concrete situation that prevails—the battlefields, the terrain, and any other factors having a direct bearing on the situation.

If all of the military historical incidents since the beginning of recorded history were summarized, the greatest resultant tactical lesson (assuming air superiority) for ground troops probably could be stated as simply as, *"Guard well our flanks and front, and seek enemy flank weakness."*

With the temperature around fifty degrees below zero Soviet tank maintenance crews "Keep 'em Rolling."

Winter Maintenance of Motor Transport

*By T. Varshavski, Red Army**

IN order to mass troops for certain large scale winter operations it has been necessary to transport large troop units (such as a corps or division) by motor for distances of 250 miles or more. Whatever the tactical considerations, maintenance of motor transport must be prepared in advance and continued until the mission has been accomplished.

All repair and service units must be coördinated under a central head. The commander has two assistants.

One is in charge of the collecting point for tow cars, repair trucks, gas trucks, etc. The two cars are used to pull out vehicles which are stuck; i.e., to pull them off the road or to a field repair shop. In case a vehicle is beyond repair it is towed to the collecting point and delivered to its unit after the completion of the tactical operation. The repair trucks perform minor repairs and distribute spare parts, materials, oils, antifreeze and batteries along the route. The gas trucks refuel empty vehicles and maintain the temporary filling stations. Tractors are used for towing on forest roads or in drifts, and also for dragging snowplows.

The other assistant supervises the field repair shops. These shops are portable and are usually placed about twenty miles apart, near villages if practicable. Each is well marked by signs and is equipped with enough tools and machinery for minor overhauls. In addition, each field repair shop is equipped with stove and Delco-type electric system. The former permits work 24 hours a day with heat and boiling water for the water trucks. The latter gives electric light and power at all times. Responsibility for servicing and repairs, for seeing that the road is clear of disabled vehicles, and for taking care of stragglers, rests on the shoulders of the manager of the field repair shop in each district.

Illustrative of one winter operation covered by the trucks was a route of march 315 miles long. Service and repairs were rendered to 600 vehicles. One field repair shop alone repaired fifty vehicles. Correct organization of the motor transport system and its maintenance greatly assisted the Red Army in preparation for a forthcoming attack.

Comments

This article points out some of the difficult motor transport conditions which have to be overcome under such severe weather conditions as existed on the Soviets' Western Front in the winter of 1941-42. These roads are generally of one-lane width with frequent "drive-offs" for passing and repairing trucks. Sometimes the two tracks are covered by boards—an expensive task in lumber, labor and maintenance. With temperatures as low as 40 to 50 degrees below zero (Fahrenheit), it is necessary to adopt many measures to prevent freezing. As antifreeze is of relatively small value, engines are kept running as much as possible. When it is necessary to stop for a long period of time the water is drained from the radiator. When the engine is started again it is necessary to first flush the radiator with hot water and then fill it with hot water. Thus much gasoline and hot water must be provided. Thin winter oil is used.

The Soviets are very ingenious at making repairs with the minimum of equipment indoors or out. They are physically able to work for hours in extreme cold.

*Military Engineer.

Air–Tank–Cavalry
In Active Reconnaissance*

By Colonel Alexei Ignatyev, Red Army

THE success of a meeting engagement requires above all the gaining of a certain amount of time for its preparation. This can be attained all the more successfully the sooner the actual direction of the enemy's blow is ascertained.

The Red Army's fighting experience reveals that this can be accomplished and the enemy blow delayed by launching land and air operations simultaneously.

Formerly assignments of this nature were carried out by cavalry formations alone. In modern warfare, when the battlefield is congested with tanks and aircraft, *only joint air, tank, motorized and cavalry formations, correspondingly reinforced with antitank and antiaircraft means, can cope with these tasks.*

This combination of tasks—*reconnaissance* and operations to check the enemy—is all the more important since the best *reconnaissance* results are attained in fighting.

It rests with the army or front command to establish where the tank formations, motorized units, cavalry and aircraft can be used to greater advantage. The proper knowledge of the terrain plays no small röle in this matter. In modern offensive operations tank formations usually precede army formations. The most effective means of combating them are by countering them with tank formations which must be on a par with the enemy's, both in numbers and quality. For the rest, the success of the battle depends on the leadership of the command, on the discipline and courage of the men, and on the coöperation with the air force.

Once the tank formations emerge from the tank battle as victors, the rout of the enemy's army formations follows as a logical continuation in solving the first task. The tank formations can then be used to help encircle and wipe out separate enemy groups and finally to pursue the enemy after successful battle operations.

Thus, in a meeting engagement tank formations fulfill the following tasks: *active reconnaissance,* to check advancing enemy groups, combat his tank formations, rout his army formations, encircle and destroy them and pursue the retreating enemy.

Let us examine each of these tasks separately in the light of the fighting experience of the Red Army. Active

*By cable to The CAVALRY JOURNAL through ICN.

Cavalry attacking the enemy in coöperation with tanks and aviation in vicinity of Kharkov.

Tanks, planes, and cavalry move forward together during tactical exercises of the Red Army.

reconaissance is carried out at a considerable distance from one's own troops and in conditions when big enemy formations may be encountered. Practice has shown that in meeting operations it is expedient to detail aircraft and big detachments of armored fighting vehicles for such reconnaissance activities. These detachments should consist of tank units reinforced with motorized infantry, artillery, antitank and antiaircraft means.

The reconnaissance detachment operates on an area of three or four roads with reconnaissance groups on every road. The forces and strength of the detachment are such as to penetrate the enemy's protective screen, his reconnaissance and vanguard units, and to determine the strength of the enemy's column. If motorized infantry and cavalry accompany the tank reconnaissance detachment, the army or front headquarters plan their movements so that they form approximately one line at the positions where the encounter with the enemy is probable.

The reconnaissance detachment enters into battle with the enemy if the latter's forces are equal or even slightly superior numerically to its own. Part of its forces are detailed to bar the enemy's further progress, the motorized infantry being widely used for this purpose while the rest strike a surprise blow on one of the enemy's flanks.

If the reconnaissance detachment is greatly outnumbered, it can pass over to the defense on any vantage ground or to a defense of maneuvers in order to hold back the enemy and gain the necessary time to regroup its forces.

The strategic tank and aircraft reconnaissance then passes over to the tactical, and the tactical to active reconnaissance. Here it is not the sequence of this transition that is the all important matter, but *continuous reconnaissance* from the period of closing with the enemy until the end of the battle.

Operations between tank formations can take the form of frontal offensive and enveloping movement, flank movement or encirclement. However in all cases it is taken into account that the tanks' fire means remain their basic striking power. From this it follows that when a tank formation goes into battle, its fire means are brought into full play. The tank formations bear down on each other very swiftly. The side that deploys for action first and operates in united battle formation that allows for incessant fire, gains undoubted advantages.

When a meeting engagement is anticipated, it is important to get ahead of the enemy in deploying for battle. With this object in view, the forces must be ready for action in good time—the main forces must deploy for action when the cover units have engaged the enemy. In the interests of greater maneuverability, it is more expedient that the second echelon in big tank formations stand in readiness until it is given a direct battle assignment.

Deployment for action is carried out on terrain that gives the upper hand over the enemy. It is important that the position selected for this purpose offer good cover, scope for maneuvering operations and that it be adapted for fire and the service work of the maintenance units.

A meeting engagement demands swift, decisive, stubborn action to achieve its aim. The lack of clarity regarding a situation must not influence the adoption of a decision and the energy with which operations are conducted. To strike a decisive blow at the enemy, time must be gained, the enemy pinned down on a definite area and *his maneuvering* possibilities thus *restricted*. This task is carried out by the active operations of reconnaissance and advanced units which in a given case figure as auxiliary groups. This group operates on a wide front and if need be sacrifices itself to hold the enemy in a defined district until the main forces of the tank formation launch the decisive attack.

The tank formation strikes its main blow at the enemy's most vulnerable spot. Moreover, it is important that the direction of the blow allow for the swift con-

centration of forces and decisive superiority of forces.

In some cases, however, the main blow has to be struck where the enemy has scope for maneuvering and holds the upper hand in forces. In that event, the tank formation after deploying occupies a defensive position, while firing from under cover, inflicts maximum losses on the enemy, and then attacks the adversary when his fire weakens, or when he turns away or retreats.

After gaining success in one direction, the tank formation transfers its main blow to another. This naturally demands flexible and uninterrupted leadership of the units. The tank battle over, the tank formation proceeds to mop up the enemy's army formation. The tank formation now has a number of advantages. All that the enemy's army formation can do now, faced by tanks, is to assume a defensive attitude. The enemy's scope for offensive action has been greatly limited. What is more, the enemy needs sufficient time to fortify his positions and organize his fire means, in order to make his defense a success.

Usually the army formation deploys comparatively slowly. Having deployed for action in one direction, it cannot rapidly regroup its battle formation for action in another.

The tank formation takes advantage of these shortcomings and by using its auxiliary group, forces the enemy's army formation to deploy in one direction, while its shock group decisively attacks from another. The enemy's army formation holds certain advantages over the tank formation only in the range of artillery fire. Hence, when preparing for offensive action, it is not expedient for the tank formation to remain at the frontline of the army formation for any length of time.

The commander of the tank formation approaches the enemy within the distance at which the enemy's artillery fire is ineffective because of a lack of observation and sends reconnaissance groups ahead in different directions to prepare for battles.

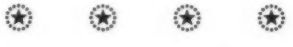
On receiving reports of reconaissance groups, particularly those in relation to the terrain, he assigns its task to the auxiliary group, while he personally leads the shock group to its initial position for the subsequent blow on the enemy's flank or rear. After the shock group has been given its battle assignment, the commander of the tank formation, together with the reserves, leaves for the command post, whence he directs the battle.

The auxiliary group distracts the attention of the enemy from the direction of the main blow and draws upon itself the foe's antitank means. The auxiliary group operates in open order along a wide front. The shock group strikes the enemy suddenly from a direction where he is least prepared to repel a tank attack. The group operates vigorously in a compact formation. It maneuvers in united fighting order and uses its fire means to the fullest.

If the enemy begins to withdraw, he must be pursued. This task should be assigned to fresh tank formations. In the absence of such, not only the tank units at hand are used for the purpose but also separate subdivisions that took part in the battle. The formations of units detailed to pursue the enemy are afforded the necessary time to make their preparations. The pursuit may be frontal or flank. Since the enemy demolishes everything en route and erects obstacles to keep his path of retreat under heavy cover, it is better to carry out pursuit along parallel routes.

The tank formation boldly surges forward, closes in on the enemy's rear positions, bars the path of retreat and forces the enemy to accept battle in unfavorable conditions. The longer the enemy is pinned down, the greater is the opportunity afforded the pursuing units to gain on the retreating enemy; the more difficult the position of the adversary and the quicker his debacle.

Aircraft, as well as separate groups from the main forces of the tank formation take part in the operations to check the retreating foe. These groups attack the enemy columns, go into ambush, attack from different places, and force the enemy to deploy and move more cautiously. In other words, they try to gain the necessary time needed by the pursuit units. The army command indicates the positions where the retreating enemy must be forestalled, has paratroops dropped on these positions, and takes the necessary measures to ensure the tank formations' supply and maintenance services.



Three factors, according to the classic doctrine of Clausewitz and the modern theory of the German *blitzkrieg*, form the basis for offensive action. They are surprise, speed, and superiority in matériel or fire power.—Major F. O. Miksche, *Attack*.

Panzer Tactics in the Mozdok Area*

By Major S. Slesarev, Red Army

THE operations of the German tanks near Mozdok are of very active character. The Germans hurl from 100 to 120 panzers into an attack on a single sector and attack usually in two or three waves.

In the fighting near Mozdok the German tanks usually advance in strict line formation with intervals of some 250-300 meters between echelons. Moreover, the tanks advance not in an extended column but in a chessboard order which permits the opening up of cannon fire by all tanks simultaneously. On the one hand such a battle order affords the Germans a certain advantage in fire; but on the other hand, the fact that the tank echelons are spread over a 600-700 meter stretch renders the struggle against them easier.

The Soviet tanks and artillery begin by concentrating fire on the first echelon. As soon as a new wave of German tanks reaches the sighted position, however, the defenders immediately direct concentrated fire at the newly sighted panzers, and leave the antitank troops to deal with the remainder of the first echelon which may have gotten through. As a rule, their armor-piercing bullets and grenades complete the destruction of the surviving enemy panzers or put them to flight.

This method of antitank warfare is the product of experience. During the early days of the fighting near Mozdok, the Soviet tankmen and artillerymen, in an attempt to cause the enemy the heaviest possible losses, kept up their fire at the first enemy panzer echelon until all the tanks were disabled or until the latter managed to effect a deep penetration of the Soviet positions. While attention was thus concentrated on the head tanks, the rear echelons wedged the main line of resistance.

Successful resistance to the enemy tank attacks is also facilitated by isolating the German infantry, which usually advance behind tanks. Concentrated fire from Soviet artillery and mortars has pinned the infantry to the ground for hours. Today the German infantry advances *between the tank echelons*. When the infantry meets Soviet fire now it scatters, not backward, but sidewise.

Time and again the Germans have tried to advance with their infantry in front of the tanks, with fire support from the rear; but this method has not succeeded in getting the infantry through the Soviet main line. On the contrary, such a battle formation restricted the maneuverability of the panzers and led to greater losses.

Heavy losses have been inflicted on the enemy tank concentrations by the Soviet bombers, Stormoviks, and by long range artillery which many times have dispersed the panzers at points of concentration and on the march. This compelled the Germans to remove the starting positions of their tanks to a distance of four, five and sometimes even eight kilometers from the Soviet main line of resistance.

Because of their tremendous losses in tanks, the Germans have lately sharply reduced the scope of tank attacks as well as the number of tanks taking part in the attacks. The Germans have paid a heavy price in past tank battles, and time obviously is required to replenish their battered divisions with new machines and to repair the damaged and mutilated ones. It is significant that they are trying at all costs to remove their damaged panzers from the battlefield.

Another feature of the fighting in the Mozdok area is that the Germans use only medium tanks for massed blows, although every tank division is equipped also with heavy and light tanks. Knowing the strength of the Soviet defenses, they deliberately keep the light tanks out of battle and wait for a break-through to take place. The Germans are also hesitating to risk their heavy tanks whose number, apparently, is limited.

*By cable through ICN exclusively for The CAVALRY JOURNAL.

Units of the Red Army Infantry, sticking close to a heavy tank, filling in a gap.

Tactics of Ambush*

By Colonel Pavel Rizin

THE commander of a Soviet infantry battalion acting on the defensive feared an enemy penetration on his flank. The terrain of the flank was thickly covered with bushes. There was an open meadowland in front, crossed by a shallow depression which ran from enemy lines in the direction of the bushes and ended about eighty yards from them. Small groups of the enemy could use the depression to reach the bushes and then filter through behind the battalion lines.

To prevent any possibility of this, the commander decided to lay an ambush in the zone held by the right flank. A section of tommy gunners under Senior Sergeant Bukvin was detailed for the ambush. The tommy gunners crawled into the bushes under cover and took up suitable positions. The sergeant placed his men so that the enemy would be caught in enfilading fire. He ordered the men not to fire without a signal from him.

The commander's fear was justified. As soon as the sun began to sink enemy tommy gunners gathered in the depression one by one until there were forty of them. They moved carefully up the depression in the direction of the bushes. Soviet tommy gunners, not betraying their position, followed the movement of the enemy group. The enemy left the depression and made a dash for the bushes. When they were within fifty yards the sergeant gave the signal, and a hail of lead burst on the Germans from three directions. About a dozen were killed instantly. The remainder threw themselves on the ground, but the level land offered no protection from bullets. The tommy gunners continued to mow them down, and disposed of the entire group in less than five minutes. The ambush had removed the danger of enemy penetration behind the battalion lines.

Ambuscades Used by Tanks and Cavalry

During the present war ambuscades are being extensively used, not only by infantry but also by other arms of the service, *particularly tanks and cavalry*. The infantry make use of ambushes everywhere—on the line of march, on reconnaissance, on convoy duty and during both offensive and defensive actions. The most frequent point of ambush is the road along which the enemy is expected to move. Quite often small groups of infantry make their way behind the enemy lines to his communications and there lay an ambush from which great losses can be caused to approaching enemy columns and transport.

A carefully prepared ambush makes it possible to inflict heavy losses on a numerically superior enemy. Success depends upon the suddenness and speed of the action. Sudden fire from a well-camouflaged group of troops or separate machine guns, followed by a bayonet charge, invariably proves successful.

The slightest neglect, or too hurried preparation, on the other hand, may lead to the failure of the ambush. Not long ago an ambush of two infantry platoons under Lieutenant Strelnikov was stationed on a road along which an enemy infantry column was expected to arrive. The lieutenant placed his men in position. About a platoon of enemy infantry appeared on the road. These were the vanguard of a column two companies strong. When they arrived at the ambushed point, Lieutenant Strelnikov gave the order to fire. The vanguard was almost annihilated, but the column advancing behind them, hearing the firing, immediately extended in open order and prepared to give battle. The ambushers could only retreat.

This ambush failed because the lieutenant gave the order to fire prematurely. He should have let the vanguard pass, awaited the approach of the main body, and poured his fire suddenly into that column. It would have been better to split the ambush itself into several groups in different places, instead of keeping them all together, so that they could fire on the enemy from several directions simultaneously and at the same time confuse the enemy with regard to the size of the ambush.

Strength of Ambush Units

Experience has shown that on roads and forest paths it is more advantageous to place an ambush on both sides of the road. The enemy is caught in infield fire and usually completely annihilated. As far as the strength of the unit used for ambush goes, this must be determined for each concrete case separately. Sometimes a company is required, sometimes a platoon, while it may even happen that a single section of tommy-gunners or riflemen is sufficient. It is important that the unit detailed for ambush should be mobile and able to make good use of cover.

Actual practice has shown that in organizing an ambush every detail of the plan of action must be carefully thought out—disposition of troops, fire strength and actual moment of attack. Particular attention must be paid to the question of communication between groups placed on different sides of the road. And most important of all, it must be remembered that even a well-organized ambush can fail if the troops do not display both endurance and discipline. Poor camouflage, a slight movement or a premature shot can give away the ambush and so lose the advantage of the element of surprise.

*Soviet Embassy *Information Bulletin*.

Tank-Mounted Riflemen

By Colonel Kononenko, Red Army

TANK landing parties* were widely used in battles on the Soviet-German Front in 1942. Experience has shown that tank landing parties, composed chiefly of automatic riflemen, are successful in their operations if they are carefully trained to act in coöperation with tank crews and think out all possible variations of operation in advance. Mounted on tanks, they streak into German lines, spread along the trenches, and engage in action against fire nests of the Germans in cellars, houses and structures. Automatic riflemen destroy what has not yet been demolished by artillery fire and tanks. At the same time they help to forward the movement of tanks by showing to tank crews the antitank gun emplacements of the Germans and by destroying the personnel of antitank guns with their fire.

Tank landing parties operate independently as well as in coöperation with attacking infantry elements after artillery preparation. The tasks of the tank landing parties are mainly to capture the commanding heights and supporting points, to destroy separate fire nests in the depth of enemy defenses which hinder the forward movement of our infantry, and thus pave the way for the progress of the next echelons of advancing Soviet tanks and infantry.

On one of the sectors of the Western Front a detachment of ten tanks with a landing party of sixty automatic riflemen under First Lieutenant Petrov were detailed to break through the German defense line and capture a supporting point by surprise attack. The task of the detachment was to break through into the depth of German defenses and suppress German antitank weapons in order to prepare passage for the following echelons of advancing Soviet troops.

Organization and preparation of the tank landing operation was accomplished in one day. The landing party was made up of volunteer automatic riflemen who received additional handgrenades and light minethrowers. Before the beginning of the operation tank crews and automatic riflemen carried out careful reconnaissance of the approaches to enemy defenses from our own line of departure and into the depth of enemy defenses as much as could be seen from our advanced observation points. Besides a map every tank commander had received the route map of attack of the landing party. The starting point chosen was one kilometer behind the first line. The concentration and start of the tank detachment to the first line was camouflaged by artillery fire and air attacks of Soviet planes on the German position. Besides that, objects of attack were bombed by Soviet planes on the night prior to the attack.

Tanks were left at the starting point in column formation before dawn. Without opening fire the tanks suddenly broke through the first line of German defenses so quickly that the Germans could not fire a

*EDITOR'S NOTE: "Tank Landing Parties" refers to the practice in the Red Army of mounting as many automatic riflemen as possible onto heavy tanks and transporting them quickly into action.

Russian tank-borne troops ready to attack Nazi position.

single shot from their antitank guns. Only the German automatic riflemen and machine guns opened fire and began lighting up the place with illuminating rockets. The rockets helped the men of the tank landing party to orientate themselves and enabled the tank crews to steer their machines according to a planned course. One tank detachment passed through the first line of German trenches without loss and at dawn broke into the village of Yeremino, occupied by the Germans. There, while in action, they crushed with their caterpillars approximately forty loaded carts, twelve antitank guns that were standing in the street and several scores of German soldiers who were caught unawares by the attack of Soviet tanks.

While the tanks were in motion, automatic riflemen of the landing party shot down German soldiers who were fleeing in panic. The tank detachment continued its advance. Germans had already been informed of the attack of Soviet tanks and near the village of Kostino at bridgehead, tanks were met by fire of six antitank guns and automatic riflemen. Tanks carrying on fire against the enemy moved in column and while in action took up fighting formation. Automatic riflemen of the landing party jumped off tanks and quickly took up the fight against German automatic riflemen, and by outflanking the German antitank guns they destroyed the enemy detachments.

As a result of short fighting the tank landing party destroyed six antitank guns and up to one hundred German soldiers. The detachment captured a bridge and continued to advance. The losses of the Soviet tank detachment were two damaged tanks and several men wounded, mainly those slow in jumping off the tank. Those advancing tank detachments shortly met another antitank battery of three guns which opened fire at them. The Soviet tanks returned the fire while in motion and the automatic riflemen, jumping from their machines, destroyed the German gun detachments with their fire. This fighting tank detachment suffered no losses.

Carried away by his success, the commander of the tank landing party, 1st Lieutenant Petrov, made the mistake of not previously reconnoitering the ground and localities lying before him. The tanks were now operating in areas unknown to him and unobservable from Soviet advanced observation points. As a result, the tank detachment got under crossfire of German antitank guns between the villages of Belaya and Maryino. The first volleys of German artillery damaged four tanks and put out of action a number of automatic riflemen—those who did not manage to jump off the tanks in time.

Quickly taking up a battle formation, the tanks opened fire at enemy artillery while automatic riflemen jumped to the ground, attacked the Germans, and opened fire at detachments of the nearest German antitank guns which were hidden in the bushes. Very soon the German gun detachments were destroyed and the Soviet tanks, after putting the antitank guns out of action, were in a position to get out of the pocket of fire. Then the landing party, having captured the enemy position, was soon supported by the following-up echelons of Soviet troops.

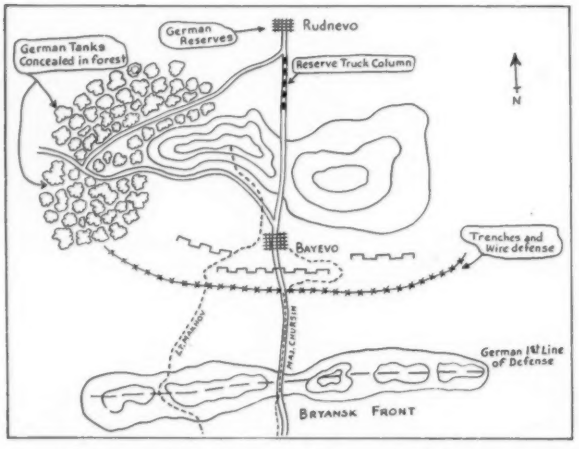
Thus as seen from the above example a well organized coöperation between a tank landing party and the tank crews made possible a rapid and easy suppression of enemy resistance and subsequent fulfillment of the assigned task. The only shortcoming was a mistake made by the commander of the tank landing party at the end of the operation when he moved across the previously unscouted area without necessary precautions and consequently suffered heavy losses from the ambushed enemy. During the entire operation the tank detachment destroyed twenty-six antitank guns, forty loaded carts, and about 150 German soldiers.

Another example: on the Bryansk front a tank landing party was assigned a more complicated task—that of capturing a commanding height in the depth of a German defended area and holding it until the arrival of the main body of the division. A certain division was given the task of breaking through German defenses and capturing their stronghold. It was found from a careful study of the situation and from examination of war prisoners that the village of Bayevo, which was to be attacked by the unit under Major Chursin, the neighboring village of Rudnevo and the adjoining forest, presented a single stronghold with closed defense and fire system. In case of attack on the supporting point in Bayevo it seemed probable that German reserve units were stationed somewhat westward of Rudnevo supporting the point from which they would attempt to outflank the Soviet units; while the German tanks hidden in the forest would attack advancing Soviet infantry. In order to enable the forward elements of advancing Soviet troops to fulfill their task, it was necessary, therefore, at the very outset to disorganize the coöperation between enemy units that occupied the stronghold.

About eight kilometers behind the German front line was a height which commanded the road between Bayevo and Rudnevo and the enemy positions. It was absolutely necessary to capture that height first. All approaches to the forest, sheltering enemy tanks, could be kept under fire from that height. It was decided to capture the height with the aid of a tank landing party. A tank group of twelve fighting vehicles, mounted by automatic riflemen under Lieutenant Makhov, was assigned to capture the height and bar the way of German reserves to the front. In case of enemy retreat, they were to hinder the withdrawal of German artillery and machine guns from Bayevo.

The artillery attack began at dawn. Soviet tanks, together with a tank group carrying the landing party of about seventy automatic riflemen, launched an attack

German soldiers surrendering to a tank-borne detachment of the Red Army.



The operation between Bayevo and Rudnevo.

at the moment of transfer of fire. Having broken through the first line of German defenses the tanks attacked enemy fire nests and then headed straight for the outskirts of Bayevo. A group of tanks with a landing party passed through a break in the wire entanglements, went along the trenches in the enemy rear, then suddenly took the road not covered by fire and rushed direct to the height. The tank group made a rapid crossing of the distance without meeting any resistance and approached the height which was fortified with trenches and wood and earth fire nests. But when the tank group approached the trenches they were mostly empty with only a few fighting tanks and machine gunners on duty. After a brief fight, the Germans were destroyed and the height taken.

The losses of the tank group were a few men wounded and one tank damaged. The damaged tank was dug into the earth and converted into a fire nest. The tanks took up position to keep the roads from Rudnevo and the forest under fire while automatic riflemen also constructed firing positions.

Meanwhile the advance on Bayevo by Major Chursin's unit was slowed down. The enemy offered stubborn resistance and in some places counterattacked. German tanks, hiding behind houses, kept Soviet tanks under fire and inflicted losses upon them. By the middle of the day the forces of the attackers and those of the defenders were almost equal. Then German reserves came along the road in trucks from Rudnevo and moved in the direction of Bayevo. At that moment Soviet tanks and the landing party on the height opened fire at a truck column barring their way. A part of the trucks were destroyed and caught fire; the rest turned back. German tanks came out of the forest, and moved in the direction of Bayevo, but when they heard fire in the vicinity of the height, they headed for it. Not far from the height they were stopped by fire from the dug-in tank. A part of the Soviet tanks suddenly appeared from behind the height and struck at the flank of German tanks. The latter retreated to the forest and opened fire from the forts. All German attempts to advance on the height were unsuccessful throughout the whole day. At night Soviet automatic riflemen captured enemy motorcyclists carrying a message to the commander of the garrison at the supporting point of Rudnevo, which demanded immediate help. Other German motorcyclists met Soviet tanks in the dark, were fired at by the automatic riflemen, and turned back to Bayevo. By dawn the garrison in Bayevo thought itself surrounded, and threw up all resistance. A part of the German soldiers fled; the rest surrendered. After the capture of Rudnevo it was discovered that it was still strongly fortified. In Rudnevo the Germans had abandoned 1,800 5mm guns, 4 mine-throwing batteries, and 24 machine guns in fire nests.

Thus the capture of an enemy supporting point was made possible by the skilful use of a tank landing party, which suddenly captured a commanding height in the depth of the German stronghold. Because of this the Germans were unable to move up their reserves in support of the garrison in Bayevo. In addition, the presence of tanks and automatic riflemen on the height made it impossible for the Germans to withdraw their weapons.

Experience has shown that for successful operations of a landing party it is necessary that the landing party be assigned a definite task which should be clearly explained; that careful reconnaissance of approaches to the enemy frontline be made in advance; that their immediate and subsequent tasks should be explained to the landing party; that the plan of coöperation between the landing party, tanks, artillery, and advancing infantry be worked out; and that the action of the landing party should be sudden.

Only the physically fit, hardy, grave, resolute and those who have already been under fire, should be selected for such an operation. It is very important to have trained tank landing groups in units. Commissioned and noncommissioned officers should be men who have had practice in fighting inside the enemy defense zone. Automatic riflemen of the landing parties should be armed with automatic rifles, semi-automatic rifles, and handgrenades. Big tank landing parties should be supplied with mine-throwers, tank machine guns and antitank rifles.

When training men of the landing parties, great attention should be paid to the skill of men in mounting and dismounting tanks at standstill or in motion. They must also be trained in rapid solution of problems of how to capture resistance nests inside enemy strongholds. Men of landing parties should be trained along with tank crews and taught the methods of communication and signalling for coöperation. Conventional signals, colors of rockets, methods of target designation by tracer bullets, and radio signalling to be used should be decided in advance. Training of men for landing parties should begin with the training of individual fighters in the mastery of arms, acquirement of habits of rapid evaluation of ground, and choice of firing positions and targets.

Tactical Principles in Tank Battles

(Air Support—Ambush—Reconnaissance)

By Lieutenant Colonel P. Kolomaytsev, Red Army

EXPERIENCE on the Soviet-German battlefront has proved that battles between tanks are inevitable. Whenever possible, however, it is more profitable to destroy the enemy tanks by action of aviation, artillery or other antitank arms, and leave Soviet tanks free to operate against enemy personnel and small-arms weapons.

Battles in which *only* tanks participate seldom, if ever, occur; therefore, *combined coördinated action of all arms* is imperative for victory. On many occasions, however, Soviet tanks have turned the tide of battle for their infantry by inflicting defeat on the German armored forces. *The more active the participation of air force, artillery, sappers, and infantry (especially motorized) in tank battles, the greater are the chances of destroying the enemy tank groupings and the smaller our losses in tanks.*

The rôle of aviation in the battle against enemy mechanized forces is particularly important. As the air force can engage enemy tanks both while they are grouped together in rendezvous and before they come within range of our guns, it must act as the initial striking force. Air reconnaissance relays by radio to the air staff the locations of enemy tanks, which should then be subjected to intensive aerial bombardment as quickly as possible. Aviation should follow them after they disperse and make every attempt to prevent them from reaching the field of battle if they cannot be put out of action. To carry out the latter task, our aviation must have air superiority over the battlefield and must base their planes just as close to the front as practicable.

Even in the course of battle between tanks, the air force should not break off engaging enemy tanks. Our individual tanks must be clearly marked, and a well coördinated system of radio and signal communication between our planes and tanks must be organized before the battle. In this way, the commander of the mechanized force is able to request aerial bombardment on the battlefield during any phase of the fighting. The task of the air force in tank battles is threefold: First, they bomb the enemy in their jump-off positions, during their movement into battle, and when they concentrate at their rallying point. Second, enemy mechanized auxiliaries such as gasoline trucks, munitions, field repair shops, *et cetera*, should be put out of commission. Third, the air force must protect our own tanks from enemy air attack.

In order to *first weaken the enemy tanks with all means at our disposal and then finish them off with our own tanks*, artillery should engage them when they come within range and observation. When confronted by numerical superiority of enemy tanks, particularly in defensive operations, the main brunt of the struggle against them must be borne by the artillery and a system of prepared antitank obstacles. The rôle of artillery involves not only the destruction of enemy tanks but also the silencing of enemy antitank defense on the battlefield. In the course of battle separate groups of tanks may be compelled to withdraw. Such withdrawal should always be covered by artillery, which insures safe maneuverability of its own tanks.

In defensive operations our tanks are sometimes concealed and at first engage the enemy tanks with stationary fire. Then, along with the infantry shock troops, they counterattack the enemy groups which break through our forward line. Sometimes it may prove more advantageous to make counterattacks deeper in our defensive positions. The reason is that the enemy usually has to be weakened by surmounting the antitank obstacles and fire to reduce his advantage of superiority in numbers. *Counterattacks should be launched at the moment when the enemy is disorganized, and before he can regroup his units for another attack.*

Commanders of tank units must be kept constantly informed about the enemy tanks opposing them—as to number, groupings, whereabouts at any given moment, and direction of any movement. It is up to him to decide just how to engage small (or large) numbers of enemy tanks. After a cool, methodical, cautious estimate, he must decide whether it is more advantageous to attack precipitately with movement, or temporarily to assume the defensive and engage the enemy with stationary fire from concealed positions. By having his tanks cruise aimlessly about the field of battle he may

Russian front line air station—a Soviet pilot sits at his controls while bombs are swiftly fixed in position on his aircraft.

The effect of an aerial attack on a German motorized supply column in Russia.

lose them by enemy tank and antitank fire; whereas, by keeping them too long in a stationary position he may find them outflanked and caught in an enemy pincer movement. Normally, the position of the commander is in the rear where he can observe his tanks and be able to effect general command.

A tank battle is primarily one of fire. While movement is important, the mere threat of outflanking the enemy will not necessarily compel him to withdraw. It is better to utilize the best positions the terrain affords for well-aimed, rapid fire. In the final analysis, *the outcome of tank battles is decided by the number of direct hits of armor-piercing shells in vital parts of the tanks.*

If the enemy tank groups are discovered in time, they can sometimes be effectively attacked from ambush. Generally, a large number of tanks should be used and the enemy tanks lured into your trap if possible, so that all your tanks can fire upon them simultaneously. An ambush should never be attempted under enemy observation. Speed is imperative because to leave the tanks too long in one place may both affect the tempo of your offensive and expose your tanks to enemy air attack.

Repeated instances of biting at the bait put out by the other side have resulted in losses of unnecessary numbers of tanks. In tank battles it is also necessary to pay attention to your flanks and front by constant reconnaissance. It is generally a good practice to keep a few tanks in reserve.

In tank pursuits it must be remembered that antitank traps are often set up in depth. The Germans resort to all sorts of ruses to lure their enemies into just such regions. Don't break into a village or forest without prior reconnaissance, as the enemy often builds strong antitank defenses there. Tanks should enter such places only along with the infantry or in rear of it.

In battles in which much material is used, the problem of evacuating and repairing it is of primary importance. If evacuation is accomplished speedily, a large percentage of damaged machines can be quickly repaired and returned to active duty. In order to insure success in that field, in the final analysis, you, and not the enemy, *must remain master of the battlefield on which the tanks have fought.* Even when compelled to withdraw you should hold the field long enough to allow removal of all damaged tanks. Otherwise, the fighting strength of your tank units becomes rapidly exhausted.

The Armored Force—Air Team

By Colonel Frederick R. Pitts, (Cavalry) G.S.C.

SINCE World War I, the horse cavalry, the mechanized cavalry, and finally the Armored Force, have realized the vital importance of the air-ground team. These branches have led the way in air-ground training in their employment of observation aviation. The Armored Force, in coöperation with the Air Corps, was among the first to develop the technique of employing combat aviation in support of ground troops. Not until the 1941 maneuvers was any serious attempt made by the Army as a whole to employ supporting combat aviation.

We now have an Air Support Directorate in the Headquarters, Army Air Forces, to handle air support matters; Air Support Commands to provide operational units; and Field Manual 31-35 which sets forth the basic doctrines for employment of aviation in support of ground forces. The 1942 maneuvers, participated in by a number of armored divisions, were designed to emphasize the coöperation of combat aviation and ground troops and to test the principles set forth in this field manual.

A recent article[1] in The CAVALRY JOURNAL describes the organization of the Air Support Command and the methods of employing aviation in support of ground troops. This article, based upon lessons gained from the 1942 maneuvers, will be devoted to pointing out how the Armored Force—Air Team can obtain the most effective support from its air components.

[1] "Air Support of Ground Troops," CAVALRY JOURNAL for July-August, 1942.

METHODS OF OBTAINING AIR SUPPORT

First and most important of all is the method of obtaining air support. It can be obtained either upon call (the request method), by having prearranged missions, or by a combination of both. It can also be provided by means of the mission type order.

Field Manual 31-35 is devoted primarily to the procedure for initiating requests through air support parties and air support controls, from which one is led to believe that the majority of targets for combat aviation will be selected by the ground units. However, except in the case of a well defined target that is easily discernible from the air, a ground observer cannot see it as viewed from above. In general, also, where ground units observe a target, it can be brought under artillery fire and is not a suitable target for combat aviation. Where a target is located beyond the range of artillery by ground reconnaissance elements, if it is a suitable target for aviation, it should also be picked up by observation aviation. Let us assume, however, that it has not been picked up by air observation. Then, unless observation is directed through the air-ground net to locate the target and is able to find it, combat aviation is not likely to be able to locate and attack this target. Battle experience, as well as maneuvers, bear out the fact that intelli-

Light bombers in a dawn attack against tanks in the California desert.

Flight of A-20's assisting advance of an armored unit held up in the woods beyond by antitank weapons in foreground.

gence for air support controls will come more from air than from ground reconnaissance.

Based on the above premises, it is believed that in a majority of cases the objectives will either be secured by air reconnaissance, or will be known prior to commitment of the ground units. Consequently, if the above conclusions be true, the so-called "calling for air support by ground units" will *not* be the common practice that the field manual might possibly lead one to believe. This then brings us to the prearranged missions, which are the result of advance planning.

A study of enemy terrain indicates the important routes, defiles, areas, road and rail centers, bridges, possible crossings and similar features which observation aviation will be required to observe. Based on this study and the essential elements of information, G-2, in collaboration with the observation unit commander, or his representative, habitually makes plans in advance covering aerial reconnaissance or search of these points, routes, or areas. Similarly, G-3 (Air), based upon the estimate of the situation and in collaboration with the light bombardment unit commander, or his representative, should plan in advance for prearranged bombing missions. "Prior to an engagement, plans for the employment of artillery are prepared and definite missions are assigned each unit in as great detail as the time and known factors permit."[2] Combat aviation is nothing more than "flying" artillery and similar plans should be made for its employment. It is surprising, however, how few plans are made in advance for employing light bombardment.

To rely on either of the foregoing methods alone for obtaining air support will not produce the best results, or meet all situations. Plans, therefore, should provide for prearranged support as well as direct support on call. This practice was followed by one of our armored corps during the 1941 maneuvers. An air support plan was published as an annex to all field orders and worked remarkably well. The chief advantage lies in reducing the number of requests to the minimum, thereby eliminating the delay involved in transmitting requests.

Still another method of providing air support is available when it is not practicable to prearrange bombing missions. A mission type order to combat aviation, with some observation attached, will result in earlier air support, more economical use of aviation and, if communications fail, still will permit employment of aviation in accordance with the predetermined wishes of the supported unit commander. As an illustration of the mission type order, in one maneuver that involved the defense of a river line by a reinforced cavalry division, the supporting air commander recommended definite missions for observation and light bombardment aviation as well

[2]Field Manual 17-60, Armored Division Artillery, paragraph 5.

as the priority of these missions. The division commander approved his recommendations and thus gave both observation and bombardment a job to do.

The Air Support Commands believe that in most cases they can accomplish their support missions if they are given a job to do and are then left alone to do it. Before any criticism is made of the mission type order, ground unit commanders should pause for a moment to reflect. Does not the ground commander prefer the mission type order when he is in support of other ground forces? Does he not believe that he can accomplish his mission better under a mission type order? Does he not feel that when he is tied too closely to other ground forces, his command may be frittered away on unimportant objectives? History records many instances where horse cavalry has been frittered away when improperly employed. Maneuvers have indicated that armored units may suffer the same fate. So lend a sympathetic ear to your air commander's advice and give him due credit for wanting to support you to the limit of his force's capability.

Whichever one of these methods is followed, an air support control should be located in the vicinity of the supported unit commander's headquarters. It is the ground commander's link with his combat aviation and monitors all requests. When planes are operating on prearranged missions, this control is available to divert them to other targets. When the aviation is operating under a mission type order the control remains silent—except when it is monitoring—until such time as other missions are to be directed or an unforeseen situation requires a change in mission.

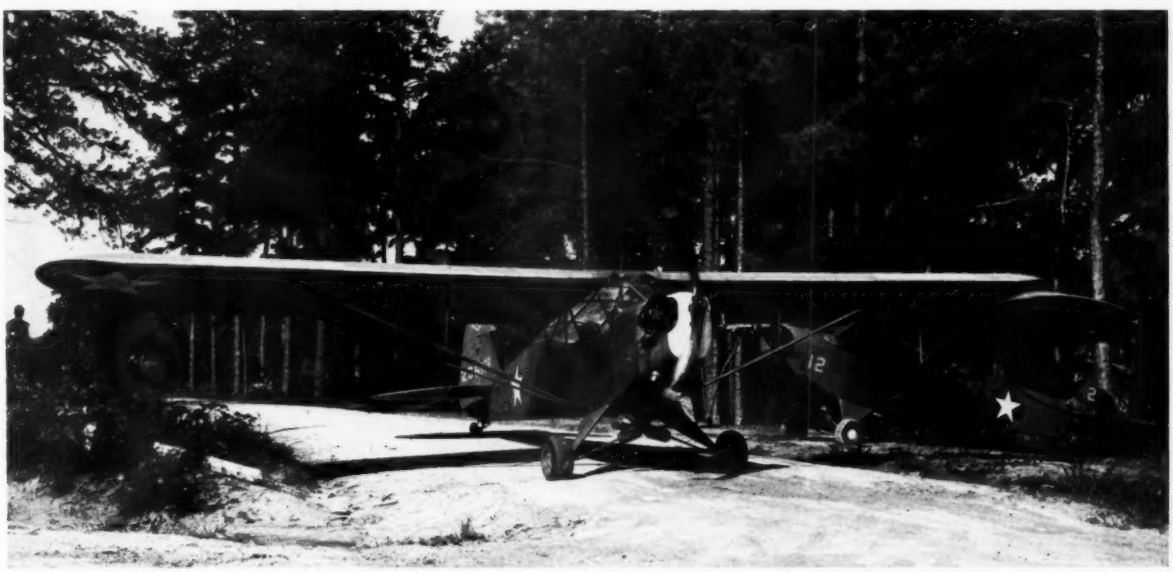
Employment of Combat Aviation

Enough has been written in the appropriate field manuals and elsewhere on the types of missions, suitable objectives, and logical targets for light bombardment aviation, without going into this phase here. For the purpose of this article, it is sufficient to say that this aviation should not be frittered away on targets within reach of artillery, or other ground weapons, while "bigger game" exists at a distance. Neither can light bombardment be expected to supplant supporting artillery, which, within the limits of its range, can lay down a more effective and continuous concentration. By this it is not meant to imply that combat aviation should not be used to augment artillery over that part of the hostile front where a decision is sought. For "the most important target at a particular time will usually be that target which constitutes the most serious threat to the operations of the supported ground force."[3] And "the final decision as to priority of targets rests with the commander of the supported unit."[3]

Experience has shown that calling for support aviation through the air support control channels is not the most rapid means of bringing fire to bear on a target. If it is a transitory target, it is not to be expected that it will remain in one vicinity long enough for the request to go through and the mission to be completed. If it is an enemy force that is holding up an armored advance, no such mobile unit will wait under fire the time required for a request to go through. Either the enemy opposition will be reduced by the armored units employing fire and movement (including fire by organic weapons and supporting artillery) or the armored units will leave a holding force and take advantage of their mobility to maneuver around the enemy or to move to another position.

A question immediately arises. What about the air alert? Will it not meet these situations? The answer is

[3]Field Manual 31-35, Aviation in Support of Ground Forces, paragraph 31.



Liaison planes using a road for an advance landing field.

a qualified affirmative. Air alert, which is a status of aircraft provided for in Field Manual 31-35, will meet such situations, if this type of alert has been provided for in the air support plan. But air alert constitutes the most uneconomical use of aircraft known. Air alert requires local air superiority obtained either as a result of neutralizing the hostile aircraft or by maintaining a continuous fighter cover. It also requires large numbers of light bombers to maintain this status even for a comparatively brief period of time. Therefore, unless sufficient aircraft is available and the situation, foreseen in advance, is most critical, air alert is not practicable.

Under normal circumstances, situations such as the foregoing can best be met by flights, or squadrons, operating on a time schedule against targets of opportunity in a prescribed area. Here again proper advance planning and intelligence should indicate the areas where the enemy is most likely to be met. This method of employment, likewise, requires a large number of bombers, but is more economical than air alert. Fighter protection may or may not be required; this depends upon the general air situation.

Some observation should remain under corps control for distinct reconnaissance, but wherever corps has retained control of all the observation, the flow of intelligence to divisions has been delayed and in many cases has been too late to be of value. On the other hand, the flow of intelligence through the air support control is usually either negligible, or is too late to be of value to combat aviation. Should control of all the observation be placed under the light bombardment commander, as has been advocated by some, then it is believed that the converse would be true, combat aviation would receive enemy intelligence first and ground units would be delayed in receiving it. It is true that under whatever command the control of observation aviation is placed, all units in the air-ground net should receive information sent by radio, provided that radio silence has not been imposed and provided that radio communications work. The fact remains, however, that the present plan of employing observation with armored units works; and nothing should be done to upset it.

Combat aviation must be provided with a radio in the air-ground net in order to intercept messages from observation aviation in flight. It must likewise be provided with a lateral means of communication with the observation airdrome in order to receive enemy intelligence from that source. It may be further advisable in certain situations to attach some observation to combat aviation for the sole purpose of locating targets, a sort of "flying" air support party, and to lead combat aviation to the target.

Communications

It should be needless to point out that execution of the air plans, both for observation and combat aviation, depends upon adequate communications. With inexperienced operators both in the air and on the ground some difficulties have been had in radio communications. But if communications officers and responsible commanders get on the job these difficulties can be remedied. The air-ground net and the bomber control net must be made to work. If communications fail due to other causes, then the plans must be flexible enough to carry on air support until communications are restored.

A similar method, with the time schedule stepped up, is applicable when it is desired to make an all-out air effort, or to provide continuous close support of front line units in an attack or a withdrawal. The difficulty here lies in identifying friend from foe; while in a withdrawal the losses of friendly aircraft are terrific when opposed by active hostile aircraft. However, if the planes are available, it may stave off total defeat as the British found out in North Africa last summer.

Past maneuvers have shown that some of the most profitable targets appear in the hour preceding darkness. About this time the enemy is preparing to move up reinforcements, supplies and ammunition. Frequently, they "jump the gun" and bunch up in rear areas, or can be caught jammed up on roads leading to the front. Late afternoon observation missions will locate these targets and late bombardment missions can be directed against them. So don't use up your last available aviation before five o'clock in the afternoon. Save some for these late missions, they'll pay "big dividends."

Observation Aviation

Normally, an armored division is allotted an observation squadron. This is an important component of the Armored Force—Air Team, and best results have been obtained where the same squadron works with the same armored division. The primary mission of the observation type planes of this squadron is to provide aerial reconnaissance for the supported unit in coöperation with ground reconnaissance units. Experience has shown that an armored division requires this observation aviation in direct support, under division control, in order that the division may receive prompt information of enemy locations and movements in proximity to its front.

Conclusion

Aviation in support of armored units may include not only observation and combat aviation, but also troop carrier units that supply ground units by air and fighter support to cover the air operations. Complete coöperation between the elements of the Armored Force—Air Team is dependent, therefore, on coördination of the operations of these air units with each other as well as with the supported ground units. In addition, it is essential that commanders and staffs of armored units have a thorough understanding of the capabilities of support aviation and their method of employment in meeting a given situation. This coöperation and understanding can only be achieved through combined training, and the same units are permitted to train and fight together.

The Division Reconnaissance Troop and Squadron

By Major R. G. Fergusson*

IN this day of rapid, mobile warfare the importance of "Intelligence" units can hardly be overestimated; therefore, the functioning of the division reconnaissance troops and squadrons should be of interest to every cavalryman and, particularly, to those relatively inexperienced young officers who are finding themselves responsible for the organization and training of these specialized units. Fortunately, texts covering the general training are available at The Cavalry School, and pertinent articles have been published, such as "G-2 and Reconnaissance Troop Training," by Captain Bellah in the September-October issue of The CAVALRY JOURNAL.

The tactical training of the reconnaissance troop or squadron must stress primarily the gathering of information and the transmission of that information to the proper headquarters. All other aspects—gunnery, road movement, tactical use of vehicles, individual and unit combat, etc., are concerned with this main function.

The platoon is, of course, the main tactical unit; it is with that force that the responsibility for the success of the mission lies. It must be realized that the platoon under the tables of organization has been deliberately set up as a reconnaissance unit, containing intelligence and communication specialists who are essential to the execution of the mission at hand. The training of the platoon personnel should be pursued with this consideration in mind. For instance, it is imperative that each car commander be thoroughly familiar with his group in order to detail the important duties. In addition, he must be a skilled driver; able to operate the radio and be responsible for the maintenance of supplies and ammunition in the car.

The driver must be adept in both fast and heavy going. He must be expert in stealth and the use of camouflage and be able to anticipate future moves of the unit. He is not merely a chauffeur, but is an integral part of the team—with the ability to operate all weapons. The "jeep" scouts must operate properly as a point: read a map, understand all signals, be able to determine the maximum load of bridges, inspect for and remove mines, be able to follow a ridge line properly, identify units, distinguish between 155mm and 105mm artillery, distinguish between light and medium tanks, etc.

The motorcycle "scouts" should not be used solely as road-control agents but should be included in the training of the platoon. Their tactical efficiency will depend upon their riding ability as well as the same type of knowledge required of the "jeep" scouts. The trained rider on the new shaft-driven cycle can follow the jeep over practically any terrain. This was one of the significant observations made in the desert. Rocky terrain, lava beds and medium sand can be negotiated even at temperatures of 125 degrees. Deep sand is another matter, but at the same time it becomes an obstacle for other vehicles as well.

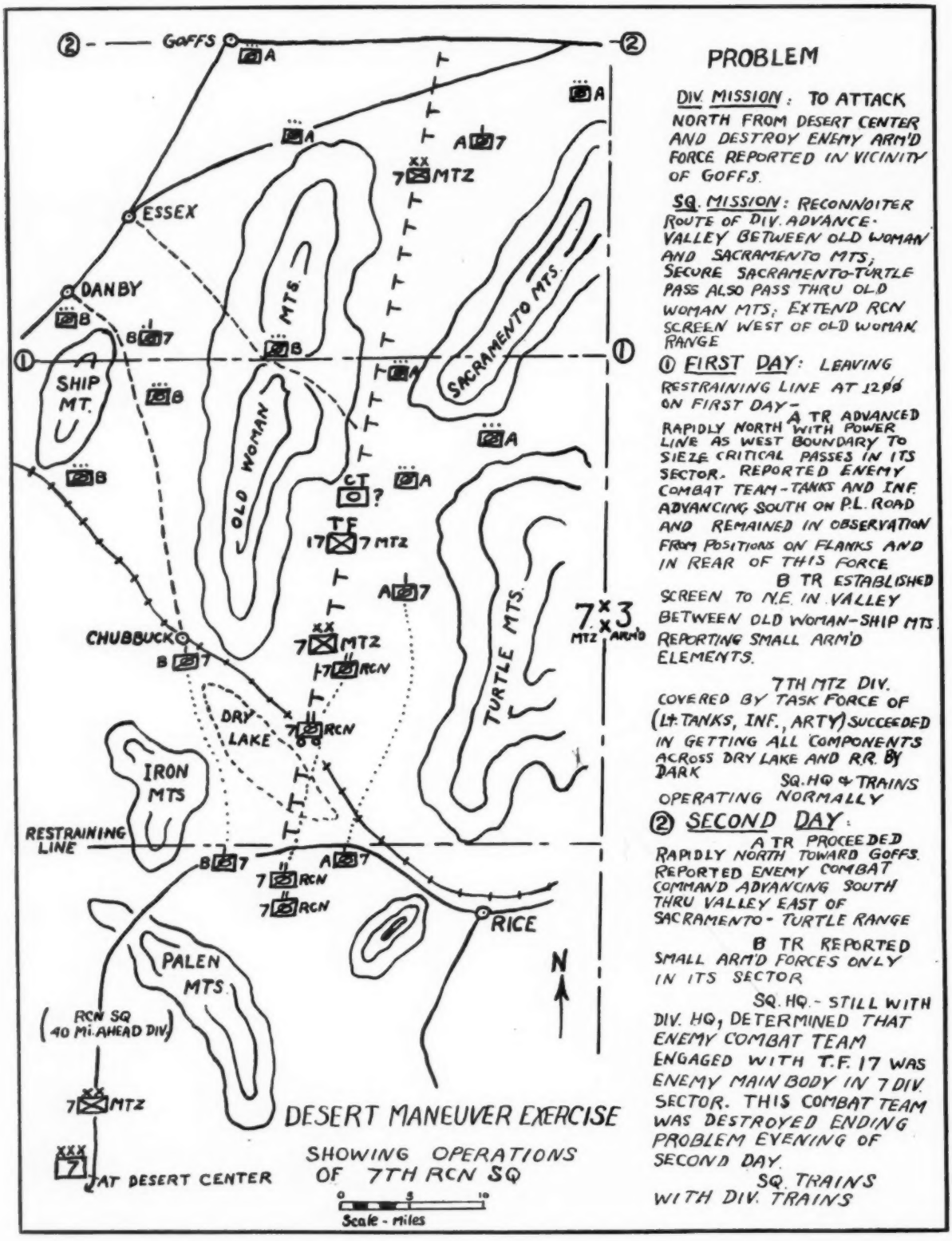
The communication personnel require constant supervision. The ability to operate a key is not enough to make them part of the team. Too often operators develop a superior attitude and feel that they belong to a select group in possession of secrets denied to the rest of the troop. They must have as much knowledge of the situation as the other occupants of the car. By continually monitoring their nets, they are able to keep the platoon commander informed as to developments. Not merely message-center personnel, they must be able to determine the relative importance of messages, and must have thorough knowledge of every phase of the problem as it affects the platoon.

The heavy artillery of the platoon (the mortar section) should not be neglected. Besides being skilled in the operation of this weapon, the men must be able to select positions and be prepared for rapid displacement in support of a rapidly changing situation. With regard to the demolition section, actual work should be performed to perfect the technique of employing explosives.

The platoon leader needs constant attention. He has had little experience and probably has only latent leadership qualities. It is a problem to develop a cagey, ag-

A friendly "General" tank pulls a scout car out of the sand.

*7th Reconnaissance Squadron.


GOFFS
ESSEX
DANBY
SHIP MT.
OLD WOMAN MTS.
SACRAMENTO MTS.
TURTLE MTS.
CHUBBUCK
DRY LAKE
IRON MTS
RESTRAINING LINE
PALEN MTS
RICE
RCN SQ (40 Mi. AHEAD DIV.)
AT DESERT CENTER
7 MTZ
7 x 3 MTZ ARM'D
DESERT MANEUVER EXERCISE
SHOWING OPERATIONS OF 7TH RCN SQ
Scale - Miles
PROBLEM
DIV. MISSION: TO ATTACK NORTH FROM DESERT CENTER AND DESTROY ENEMY ARM'D FORCE REPORTED IN VICINITY OF GOFFS.
SQ. MISSION: RECONNOITER ROUTE OF DIV. ADVANCE. VALLEY BETWEEN OLD WOMAN AND SACRAMENTO MTS; SECURE SACRAMENTO-TURTLE PASS ALSO PASS THRU OLD WOMAN MTS; EXTEND RCN SCREEN WEST OF OLD WOMAN RANGE
① FIRST DAY: LEAVING RESTRAINING LINE AT 12.00 ON FIRST DAY-
A TR ADVANCED RAPIDLY NORTH WITH POWER LINE AS WEST BOUNDARY TO SIEZE CRITICAL PASSES IN ITS SECTOR. REPORTED ENEMY COMBAT TEAM-TANKS AND INF. ADVANCING SOUTH ON P.L. ROAD AND REMAINED IN OBSERVATION FROM POSITIONS ON FLANKS AND IN REAR OF THIS FORCE
B TR ESTABLISHED SCREEN TO N.E. IN VALLEY BETWEEN OLD WOMAN-SHIP MTS. REPORTING SMALL ARM'D ELEMENTS.
7TH MTZ DIV. COVERED BY TASK FORCE OF (Lt. TANKS, INF., ARTY) SUCCEEDED IN GETTING ALL COMPONENTS ACROSS DRY LAKE AND R.R. BY DARK
SQ. HQ & TRAINS OPERATING NORMALLY
② SECOND DAY:
A TR PROCEEDED RAPIDLY NORTH TOWARD GOFFS. REPORTED ENEMY COMBAT COMMAND ADVANCING SOUTH THRU VALLEY EAST OF SACRAMENTO-TURTLE RANGE
B TR REPORTED SMALL ARM'D FORCES ONLY IN ITS SECTOR
SQ. HQ.-STILL WITH DIV. HQ, DETERMINED THAT ENEMY COMBAT TEAM ENGAGED WITH T.F. 17 WAS ENEMY MAIN BODY IN 7 DIV. SECTOR. THIS COMBAT TEAM WAS DESTROYED ENDING PROBLEM EVENING OF SECOND DAY.
SQ. TRAINS WITH DIV. TRAINS

gressive platoon officer. The first necessity is to make him aware of the importance of the development of his sense of responsibility. His natural loyalty to his organization should be subordinated to the realization that he is working for the combat team of the division. The division commander's problem must be apparent to him, and he must understand that no action can be taken by the division until the results of reconnaissance—both

Night bivouacs required tight triangular formation in order to provide protection for sleeping men against roving tanks and jeeps.

Small unit breaking bivouac after night spent within enclosure of vehicles which afforded protection from night raiders.

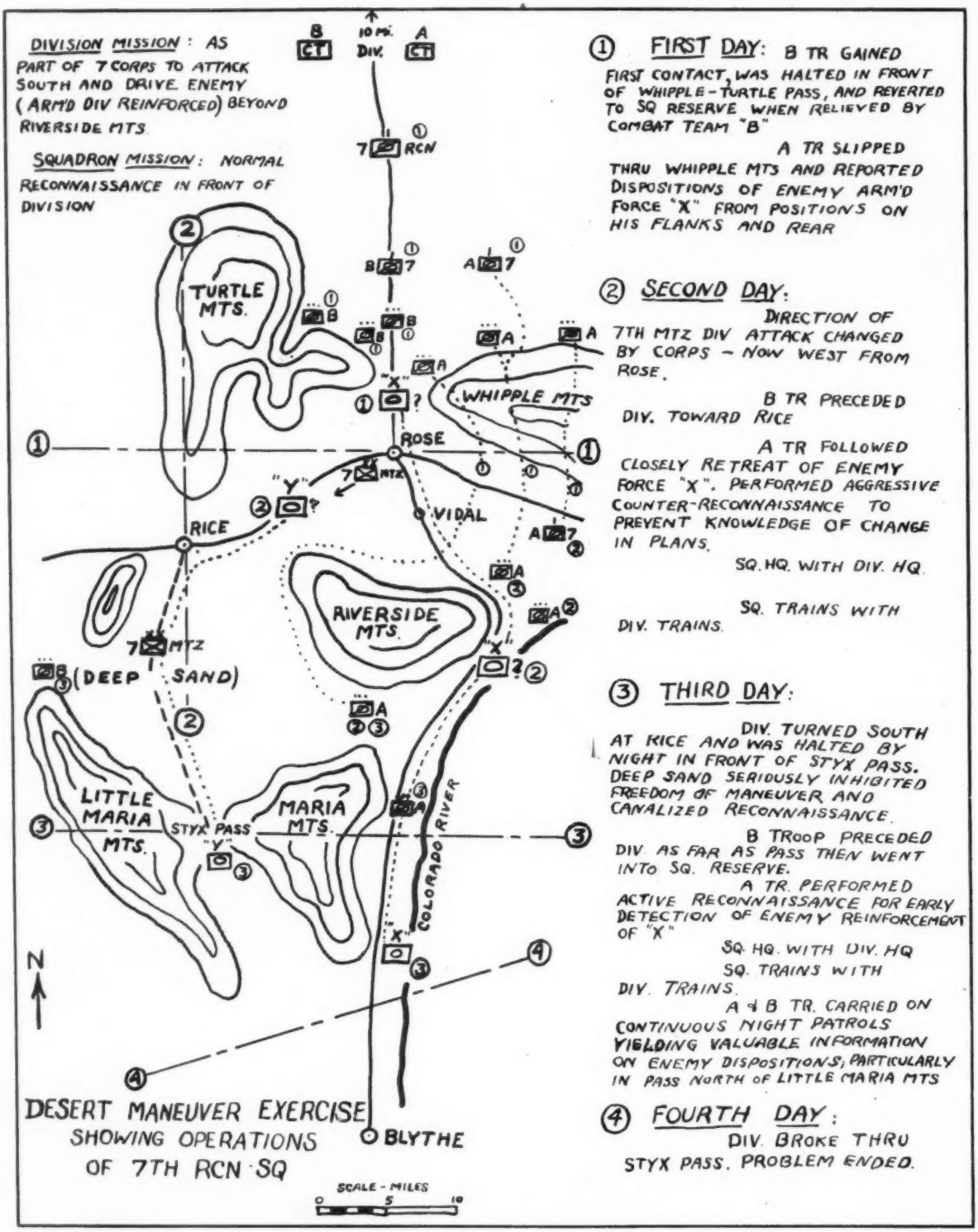
ground and air—are known. His is the responsibility to contact the infantry unit that is following his platoon, and to deliver to them enemy or terrain information. The platoon leader should be thoroughly grounded in the essentials of navigation, and able to operate by "dead reckoning" on any terrain.

When the platoons are ready for advanced tactical training, problems can be set up which require a specific technique. Although primarily aggressive, it is well to remember that while on reconnaissance missions, the platoon must not fight except when necessary to insure the gain of needed information. The situation as presented in the problem, therefore, should permit the enemy to be outsmarted without actual combat. Occasionally a situation should include enemy counter-reconnaissance elements that might possibly be trapped or destroyed without diverting the platoon from its mission. The lesson to be learned from the problem is that all temptations for "glory hunting" must be avoided. These "side issues" usually conflict with the fulfillment of the mission, but there *are* situations where it can be done. *The accomplishment of the mission must always be uppermost in the leader's mind.*

In the past many reconnaissance units have been encouraged to play "raider"; to capture vehicles and shoot up columns without full regard to the mission. The reconnaissance troop commanders have complained that the division staff did not use their unit properly—in fact, considered it to be a combat "tank" outfit. However, if on the security missions, the temptation to "play" had been avoided, and reconnaissance conducted with a continuous flow of information, the division staff would have realized his value as an "Intelligence" unit and suitable missions would have resulted in future tactical problems that involve the reconnaissance troop.

Despite the necessary emphasis on "pure" reconnaissance, the troop will often have security missions that will require aggressive tactics, such as protecting a flank, raiding supply points or acting as a rear guard. The active security and combat missions may well be as

Deep sand sometimes proves to be an obstacle.


DIVISION MISSION: AS PART OF 7 CORPS TO ATTACK SOUTH AND DRIVE ENEMY (ARM'D DIV REINFORCED) BEYOND RIVERSIDE MTS.
SQUADRON MISSION: NORMAL RECONNAISSANCE IN FRONT OF DIVISION
B CT
10 Mi.
Div.
A CT
7 RCN
TURTLE MTS.
WHIPPLE MTS
ROSE
RICE
VIDAL
"Y"
RIVERSIDE MTS.
(DEEP SAND)
LITTLE MARIA MTS.
STYX PASS
MARIA MTS.
COLORADO RIVER
BLYTHE
N
DESERT MANEUVER EXERCISE
SHOWING OPERATIONS
OF 7TH RCN SQ
SCALE - MILES
0 5 10
① FIRST DAY: B TR GAINED FIRST CONTACT, WAS HALTED IN FRONT OF WHIPPLE-TURTLE PASS, AND REVERTED TO SQ RESERVE WHEN RELIEVED BY COMBAT TEAM "B"
A TR SLIPPED THRU WHIPPLE MTS AND REPORTED DISPOSITIONS OF ENEMY ARM'D FORCE "X" FROM POSITIONS ON HIS FLANKS AND REAR
② SECOND DAY:
DIRECTION OF 7TH MTZ DIV ATTACK CHANGED BY CORPS - NOW WEST FROM ROSE.
B TR PRECEDED DIV. TOWARD RICE
A TR FOLLOWED CLOSELY RETREAT OF ENEMY FORCE "X". PERFORMED AGGRESSIVE COUNTER-RECONNAISSANCE TO PREVENT KNOWLEDGE OF CHANGE IN PLANS.
SQ. HQ. WITH DIV. HQ.
SQ. TRAINS WITH DIV. TRAINS.
③ THIRD DAY:
DIV. TURNED SOUTH AT RICE AND WAS HALTED BY NIGHT IN FRONT OF STYX PASS. DEEP SAND SERIOUSLY INHIBITED FREEDOM OF MANEUVER AND CANALIZED RECONNAISSANCE.
B TROOP PRECEDED DIV. AS FAR AS PASS THEN WENT INTO SQ. RESERVE.
A TR. PERFORMED ACTIVE RECONNAISSANCE FOR EARLY DETECTION OF ENEMY REINFORCEMENT OF "X"
SQ. HQ. WITH DIV. HQ
SQ. TRAINS WITH DIV. TRAINS.
A & B TR. CARRIED ON CONTINUOUS NIGHT PATROLS YIELDING VALUABLE INFORMATION ON ENEMY DISPOSITIONS, PARTICULARLY IN PASS NORTH OF LITTLE MARIA MTS
④ FOURTH DAY:
DIV. BROKE THRU STYX PASS. PROBLEM ENDED.

numerous as the actual reconnaissance problems. The Tables of Organization and Tables of Basic Allowances have set up the unit for reconnaissance and prepared it for "slashing" and not for sustained tactics; but the armored vehicles and the heavy fire power are eyed avidly by the division staffs for use on combat missions. The troop commander, however, should be prepared to undertake any assigned task with enthusiasm and should set up his organization in the best manner to accomplish the assignment.

Often it is possible to organize a heavily armed task force that will satisfy G-3 and yet keep enough force

for proper reconnaissance. For example, in the recent desert maneuvers the motorized division was occupying a semicircular ring of hills protecting a bridgehead. The enemy was a reinforced armored division. The reconnaissance squadron was given the mission of delaying and harassing the enemy as well as garnering information regarding his strength and movements.

Since the enemy was advancing, the platoons were not to be required to fight for their information, but could elude the counterreconnaissance elements in the hills. For this mission one scout car was taken from each. These "skeleton" platoons then operated on a front of 120 miles and kept close watch on all corridors and passes. For the harassing force, two provisional troops were set up which included the antitank platoon and extra scout cars. To meet the enemy head on, these troops advanced in separate corridors. Immediately after contact, the units deployed on a wide front and pulled specially prepared drags to raise the dust. By this simulation of large forces and by aggressive delaying tactics the armored division was retarded and the infantry division was given more time in which to prepare its various positions. In this case, the harassing mission was carried out without any detriment to the reconnaissance unit which gave a correct picture of all enemy movements over a period of three days.

In a case where a combat security mission is ordered for the unit, the reconnaissance commander should study the situation and decide if a special task force could be employed and still leave at least skeleton reconnaissance platoons for normal operation. Care must be taken that the division headquarters is aware of the action and does not feel that the assigned task is being slighted.

In the summer desert maneuvers, a motorized division gave the reconnaissance squadron a real test. These maneuvers took place on the California desert, roughly in the triangle of Needles, Blythe, and Indio, where the two big obstacles, heat and terrain, are reputed to be even more difficult than on the Libyan desert. Throughout the maneuver, the motorized division staff assigned reconnaissance missions which accorded the maximum amount of training for the squadron. The cavalry preceded the division on all problems despite the fact that on some occasions, the opposing forces started with only a few miles between main units. Thus the squadron was given close and, even battle, reconnaissance missions.

At the start of the maneuvers it was conceded that distant reconnaissance was normal, and it was thought that although the practice was valuable, the close reconnaissance missions were impractical. It soon became apparent, however, that the division staff benefited greatly by the continuous reconnaissance.

The amazing mobility of the motorized division was one of the surprises of the maneuver, and in order to use this mobility properly, the division commander required a continuous flow of reports of enemy and friendly dis-

1—Class B ration. 2—Visibility unlimited. 3—Jeep scout.

positions. Thus, in situations where the "Manuals" might require the squadron to retire the troops to division reserve or to occupy a flank, the deployed platoons, with their trained observers, continued to keep the division staff informed of developments. It became usual for the squadron to precede the division on normal distant reconnaissance. As the combat team closed up, the squadron headquarters joined the division headquarters, and thus eliminated one link in communications. The platoons continued on in "close" reconnaissance until the infantry became locked in combat, at which time the platoons reverted to reserve. This was considered sound tactically, as it was of material assistance to the division throughout the maneuvers.

The key to this success was the perfect functioning of communications. During the several exercises, some of which lasted for several days, the squadron headquarters never was out of touch with a platoon.

Desert road.

Command post.

The communication plan as now set up for reconnaissance squadrons seems to be practical in operation except for the lack of a liaison officer and liaison radio set to be attached to division headquarters. Without him, even though the squadron communications may be perfect, the most important link—that between division headquarters and reconnaissance squadron headquarters—is not under the squadron commander's control. When the squadron is in the G-2 net, vital information ranging from terrain estimates to enemy information, must wait upon the convenience of the G-2 operator and when he will accept the message. But when a liaison car with crew and a liaison officer is at division headquarters, he can keep a situation map, continually check with and advise G-2, and G-3, and keep the squadron informed of developments. This use of a liaison officer has the additional advantage of permitting the squadron to dispense with the division signal operating instructions. The use by the squadron of a separate short code and different thrust lines or grid, would not compromise the signal security of the division in the event of capture.

Supply was, as expected, an obstacle. The "Manuals" admit that the supply of such a mobile unit is a serious problem, but they offer no solution. Even when the platoons are operating behind the enemy, gas, water, and rations must somehow reach them. Of necessity, the noncombat vehicles of the troops—gas and oil, and kitchen trucks—remained in the squadron train. The S-4 had a scout car with radio that operated in the liaison net. By monitoring the net and by keeping a situation map, these supply officers were aware of the location of each troop and individual platoon. In this way the needs of the platoons could be anticipated and nightly contact could be made. Despite the fact that the units were often behind the lines these contacts were made without the loss of any supply vehicles throughout the maneuvers.

Motor maintenance was, of course, a basic problem. The terrain, ranging from deep sand to lava beds, gave all vehicles a strenuous test. Springs were broken, rubber stripped from directional tread tires—and even the cactus caused forty flat tires on one exercise. This last emergency was met by mounting an air compressor on a mechanic jeep to accompany each platoon. This unit was also a great help in permitting the deflating of tires to enable units to cross deep sand dunes. In time the drivers learned to avoid the cacti and to cut down cross-country speed which lessened the actual number of breakdowns. Strict attention to first echelon maintenance kept the maximum number of vehicles ready for service. The cavalry custom of care for transportation—whether horse or motor—before anything else, achieved the desired results.

The M3A1 scout car was able to cross all types of terrain except boulder-strewn areas. Deep sand was usually an obstacle, but if they could keep rolling, the scout cars seldom got stuck. If they stopped, the sand took

Individual cooking.

The desert usually affords ample camouflage material.

Cactus caused many flat tires.

hold and it was necessary to deflate the tires. If that measure was not successful, the services of a track vehicle to pull them out of the sand were required. All types of heavy going required the cars to be in auxiliary low range, which meant a maximum speed of five miles per hour. This low speed was a decided handicap when operating with and against track vehicles.

Water consumption was surprisingly low even in the most intense heat. It seldom amounted to more than the normal amount used. Gas consumption varied according to the type of terrain crossed. In heavy going that required four-wheel drive, low gear, the scout cars averaged five miles per gallon, while the jeeps averaged twelve miles to the gallon. (The normal rate is ten miles to the gallon for the scout car and eighteen to twenty miles per gallon for the jeep.) The scout car carried thirty gallons of gas and fifteen gallons of water in five-gallon containers, while the jeep had ten extra gallons of gas and five gallons of water.

Security problems were found to be accentuated in the desert. The lack of overhead cover meant a continuous air alert against the cactus-hopping A-20's, which were met by every active means and the two passive measures—dispersion and slit trenches.

Defensive measures against the fast moving tanks proved to be a problem for the slow scout cars. However, the desert usually provided ample camouflage material—and the far-ranging jeep patrols usually brought early warning to the platoon scout cars. Although it was necessary to disperse vehicles during daylight, at night, when in bivouac, they were placed in a close bumper-to-bumper triangular formation. This last measure permitted the men to sleep within the enclosure without fear of being crushed by roving enemy tanks and jeeps.

The air compressor mounted on a jeep was the antidote for cactus punctures.

Men and equipment had a severe test in the desert, and it is regretted that the support troop had not been activated.

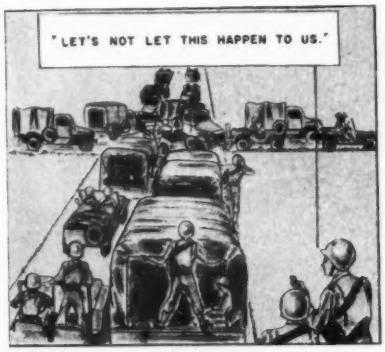
The light tanks encountered in the desert—notably the M5's— made the squadron rather envious and caused speculation as to whether that model tank would make the ideal reconnaissance vehicle despite its noise of operaton. This vehicle provides superior cross-country mobility, turning ability, bridging and hill-climbing ability, crew and equipment protection, fire power, protected all around vision, platform stability, and accelerating ability superior to the scout car. The present limited range can be increased with auxiliary fuel tanks.

In the September-October issue of The CAVALRY JOURNAL there appeared the question, "Are reconnaissance units being used on proper reconnaissance missions?" It may be stated in reply that this motorized division, for one, employs its reconnaissance squadron in the manner for which it was intended.

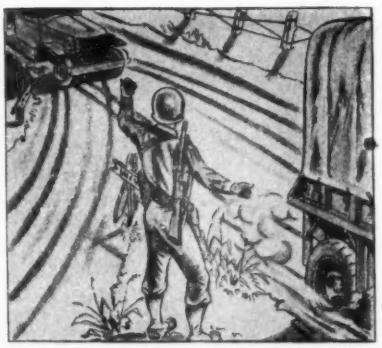
DO'S and DON'TS

In Tactical Training

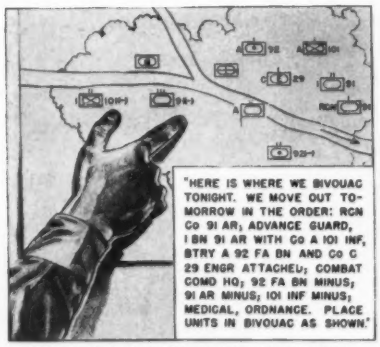
Editor's Note: The following illustrations are taken from *Tactical Training Aid*, issued by the Headquarters of The Armored Force. We commend it for its simplicity of detail and thoroughness of purpose and submit it for your careful study.



KEEP TRAFFIC MOVING.

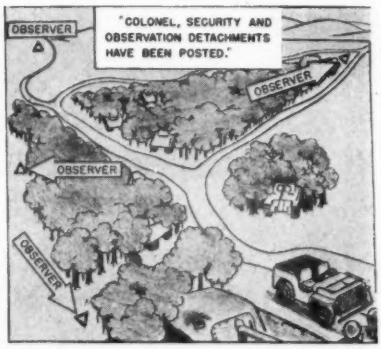


POST GUIDES. DON'T LET YOUR COLUMN TAKE THE WRONG ROAD.

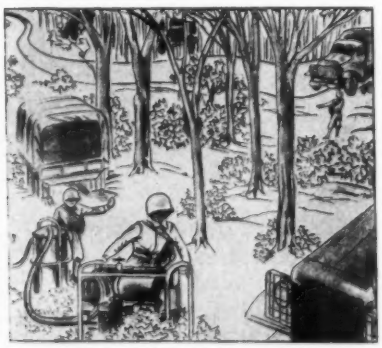

"HERE IS WHERE WE BIVOUAC TONIGHT. WE MOVE OUT TOMORROW IN THE ORDER: RCN Co 91 AR; ADVANCE GUARD, I BN 91 AR WITH Co A 101 INF, BTRY A 92 FA BN AND Co C 29 ENGR ATTACHED; COMBAT COMD HQ; 92 FA BN MINUS; 91 AR MINUS; 101 INF MINUS; MEDICAL, ORDNANCE. PLACE UNITS IN BIVOUAC AS SHOWN."

PLACE UNITS IN BIVOUAC SO THEY WILL NOT HAVE TO GO THROUGH ANOTHER UNIT'S BIVOUAC, IN FORMING COLUMN FOR NEXT DAY'S MARCH.

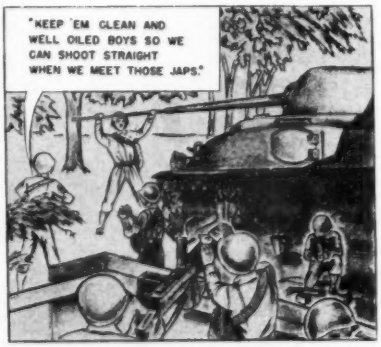
SEE THAT YOUR KITCHENS DO NOT GET LOST.



POST SECURITY AND OBSERVATION AT EACH HALT—NO MATTER HOW SHORT. DO NOT LET YOURSELF BE SURPRISED.



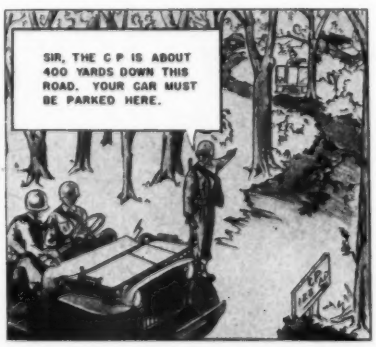
PLACE WATER POINTS WHERE CONCEALMENT FOR WATER PURIFICATION UNIT AND WAITING TRUCK IS AVAILABLE. DISPERSE VEHICLES UNDER COVER. POST GUARDS OR MP'S TO KEEP AND ENFORCE SECURITY MEASURES.



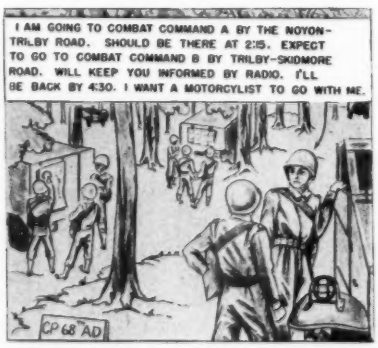
KEEP WEAPONS CLEAN AND WELL OILED. TAKE CARE OF THEM AND THEY'LL PROTECT YOU. ABUSE THEM AND YOU MAY HAVE TO FIGHT WITH YOUR HANDS, TEETH AND FEET.

DON'T LOAD YOUR KITCHEN WITH SO MUCH IMPEDIMENTA, THAT THE COOKS ARE UNABLE TO WORK, WHILE EN ROUTE.

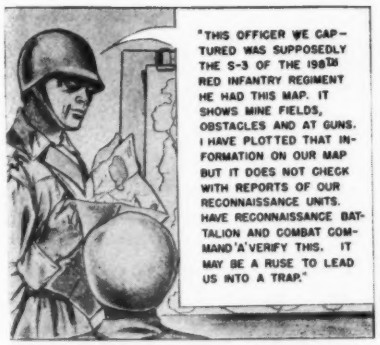
LEAVE A GUIDE AT THE OLD C P



POST CP SIGN AND GUARD AT ENTRANCE OF CP PARK CARS AWAY FROM CP


I AM GOING TO COMBAT COMMAND A BY THE NOYON-TRILBY ROAD. SHOULD BE THERE AT 2:15. EXPECT TO GO TO COMBAT COMMAND B BY TRILBY-SKIDMORE ROAD. WILL KEEP YOU INFORMED BY RADIO. I'LL BE BACK BY 4:30. I WANT A MOTORCYLIST TO GO WITH ME.
CP 68 AD

KEEP CP INFORMED AS TO WHERE YOU ARE AND WHERE YOU ARE GOING.


"THIS OFFICER WE CAPTURED WAS SUPPOSEDLY THE S-3 OF THE 198TH RED INFANTRY REGIMENT HE HAD THIS MAP. IT SHOWS MINE FIELDS, OBSTACLES AND AT GUNS. I HAVE PLOTTED THAT INFORMATION ON OUR MAP BUT IT DOES NOT CHECK WITH REPORTS OF OUR RECONNAISSANCE UNITS. HAVE RECONNAISSANCE BATTALION AND COMBAT COMMAND 'A' VERIFY THIS. IT MAY BE A RUSE TO LEAD US INTO A TRAP."

VERIFY ANY INFORMATION FOUND ON PRISONERS EVEN THOUGH IT MAY APPEAR AUTHENTIC. THE ENEMY IS FULL OF TRICKS CONVERSELY DO NOT LET YOURSELF BE CAUGHT WITH VALUABLE PAPERS.

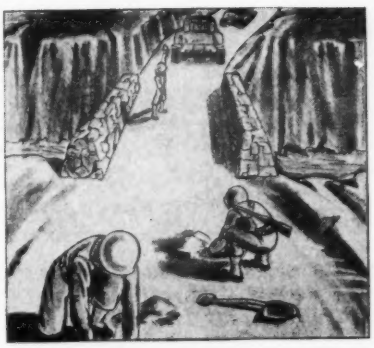
"HELLO JOE, HELLO JOE, CAN YOU HEAR ME— WHO WAS THAT GIRL I SAW YOU WITH IN PRZML"
"CAN THE CHATTER DON'T CLUTTER UP THE ETHER— WE HAVE THE "JAPS" TO BEAT!"

STOP USELESS RADIO TALK.

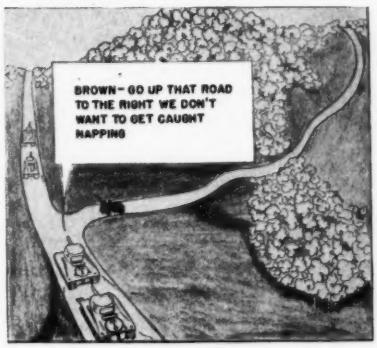
WE HAVE JUST INTERCEPTED A MESSAGE SENT BY THE 110TH RED DIVISION TO HIS ANTITANK UNITS. HE HAS ORDERED THEM TO-----."
"VERIFY THAT MOVEMENT; PERHAPS RED IS TRYING TO FOOL US BY A FAKE MESSAGE. WE'RE READY FOR HIM ANY DIRECTION HE JUMPS; BUT IT WILL HELP IF WE KNOW JUST WHEN AND WHAT HE IS GOING TO DO."

BEWARE OF ENEMY RADIO ORDERS SENT IN THE CLEAR OR IN EASILY BROKEN CODE. IT MAY BE A RUSE. CONVERSELY DO NOT SEND RADIO ORDERS IN THE CLEAR EXCEPT WHEN THE ENEMY WILL NOT HAVE TIME TO COUNTERACT THEM

COVER LEADING ECHELONS BY GOING INTO POSITION.



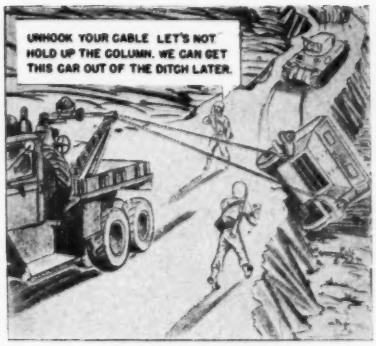
DO NOT LET YOUR OWN TANKS RUN OVER YOUR OWN MINES THEY WILL BE BLOWN UP TOO



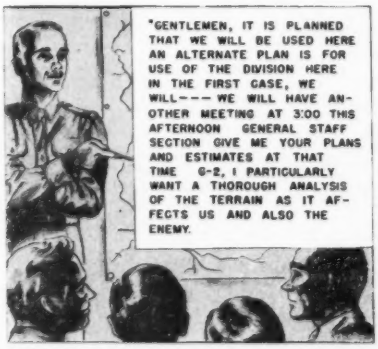
WATCH YOUR FLANKS

DON'T HESITATE TO RECONNOITER DISMOUNTED.

SCREW FILLER CAPS DOWN TIGHTLY ON FULL GAS DRUMS.



DON'T BLOCK THE ROAD


"GENTLEMEN, IT IS PLANNED THAT WE WILL BE USED HERE AN ALTERNATE PLAN IS FOR USE OF THE DIVISION HERE IN THE FIRST CASE, WE WILL--- WE WILL HAVE ANOTHER MEETING AT 3:00 THIS AFTERNOON GENERAL STAFF SECTION GIVE ME YOUR PLANS AND ESTIMATES AT THAT TIME G-2, I PARTICULARLY WANT A THOROUGH ANALYSIS OF THE TERRAIN AS IT AFFECTS US AND ALSO THE ENEMY.

GIVE A CLEAR DIRECTIVE TO THE STAFF. ALWAYS THINK OF TERRAIN AND REQUIRE A CAREFUL AND CONTINUING ANALYSIS OF IT.

KEEP LOWER COMMANDERS INFORMED OF SITUATION.

PLAN YOUR ACTION CLEAR THROUGH. DO NOT STOP WITH PLANS FOR THE FIRST OBJECTIVE YOU MAY NOT REACH IT, LOWER UNITS WANT TO KNOW WHAT TO DO.

American Tanks in Action in Southern Sector of Soviet-German Front

By Z. Ostrovsky

TANKS sent by the American people are playing a considerable part in the fighting in the southern sector of the Soviet-German front. I discussed the question of the showing made by American tanks with some of the crews who manned them during the recent fighting. This was just after a hot tank battle in which about 600 tanks took part on both sides.

"American machines made an excellent showing in action," Captain Volkov said. "Take this light tank—it has splendid fighting and maneuvering qualities. In this respect it is fully as good as the light Soviet tank, which has a high rating. It is in many ways superior to the German tanks. We have had no reason, either, to complain of the speed or quality of armor of American tanks. An especially good feature of the American tanks is that they operate well on any kind of fuel. Their mechanism is simple to handle and enables men to learn to handle them very quickly.

"We are also fully satisfied with the fire-power of the American tanks. Both cannon and machine gun work smoothly and are easy to operate. What our men particularly like is the combination of cannon and machine gun.

"What else can I say? Here is a tank that has covered a thousand miles without a single breakage or repair. The only suggestion we might make is that the interior arrangement could be better adapted to specific fighting requirements. We have found it necessary to introduce certain changes in the tank's interior to safeguard the crew from fire, in case incendiary bullets lodge inside the tank."

I next spoke to an experienced tank commander, Colonel Starokoshko, a graduate of the Academy of Motorization and Mechanization, chief of staff of a large tank formation. He corroborated all the good I had heard about American tanks from Captain Volkov. He added some words about the mobility of American machines and how they stand up in action. "One very good feature," he said, "is that the motors do not overheat on long marches. The motor and treads work normally during long marches. The tanks easily ascend slopes of forty to forty-five degrees.

"Another very important feature is the American tank's fire-power. The American tank gun is very accurate in its firing. It would be an added advantage, however, if the shells were heavier. American tanks, due to the proper finish of the parts, do not make much noise, which is a great advantage in surprise attacks."

Colonel Starokoshko finished with this remark, "I'd like to say bluntly, as a soldier—these tanks would be a lot better if we had more of them. Our men have golden hands. They know how to take good care of a good machine and to get the maximum effect from it in fighting. But at this juncture the important thing for us is not only quality but quantity. We haven't got enough tanks."

U. S.-built half-tracks haul Red artillery over a muddy roadway.

Some Notes on Training*

THE object of training is to fit each Officer, N.C.O., and man for the tasks he will have to perform in war and to build up efficient teams (units) to work in harmony and coöperation with each other on the battlefield.

The complexity of the military machine has increased with the years. Compare the tasks of the company commander of old with the present-day one. Control is much more difficult in modern war than formerly, because of this complexity and because the pace is hotter.

Control, both in training and in the field must be decentralized for four reasons:—

(1) The battalion commander could not personally train and back each man.
(2) Because each commander has to lead his men in action, he should learn to lead and practice leading them in training.
(3) Because the degrees of training required and tasks to be performed will vary with the varying size of unit.
(4) Responsibility is taught through training.

Method

Method is required in planning training. It must be thought out. Each commander is charged with the responsibility of planning the training his unit requires.

What training is required:

(1) The individual training of leaders.
(2) The individual training of men.
(3) Collective training of units.

The battalion commander is responsible for:—

(1) Individual training of his officers (staff and others).
(2) Seeing that the company commanders and attached unit commanders train their officers.
(3) Seeing that the training of the N.C.O.'s and men is proceeding on the correct lines.
(4) Training the battalion to fight as a unit.

The company commander is responsible:

(1) For training his platoon commanders.
(2) For seeing that the platoon commanders train their N.C.O.'s.
(3) For seeing that the training of N.C.O.'s and men is proceeding on the right lines.
(4) For training his company to fight as a unit.

The platoon commander is responsible:

(1) For the training of his N.C.O.'s.
(2) For directing the training of the men.
(3) For supervising and directing the training of the sections.
(4) For training his platoon to fight as a unit.

The section commander is responsible for:—

(1) The individual training of men in the use of their weapons; in scouting, in the use of ground, in fire and movement, etc.
(2) Training the section to operate in combination with the other sections in the platoon, both rifle and L.A.

Staff officers are responsible for training their sections, and commanders of attached units for training their officers, N.C.O.'s and men.

There is, therefore, a descending and ascending scale of responsibility from the battalion commander down to the section commander and the men, and from the section commander upwards.

Each officer is responsible for improving and keeping up-to-date his own training, by private study. It is a ceaseless study.

No one must be relieved of his responsibility for training. It is futile to blame subordinates for not being able to train their units if they have not been shown how. Only a commander who has been found, after training, to be unfit to train his subordinates should be relieved.

Inspection and Supervision of Training

Supervision of training is essential. Just as an order given is not an order carried out, so is the programme of training itself useless unless its execution is supervised.

Supervision is not merely looking at the training being done. It is a *study* of how it is being done; of what results it is producing; of how it can be done better and in the shortest possible time. We have not time to waste, and no place for boredom.

The men have a right to the best possible training we can give them; and the nation, to the best trained army we can produce. It is our responsibility to see that they get it. Battle is the test of training. We will get only the results in battle which our training merits. If we cannot be as well-equipped as our enemy, we can be as well, if not better, trained in the use of the weapons we have.

Inspection

Inspection must be planned—decide beforehand what you are going to examine.

Previous knowledge of the syllabus, amount of training already done, and of the programme to be inspected, is necessary.

It will usually be possible to examine the programme beforehand.

Inspection must be methodical; do not try to inspect four or five units during a period of one hour.

*Courtesy *An Cosantoir*, Eire.

Points on which to inspect:

Records—T.O.E.T. and training records will give an indication of the general standard.

Programme—Is there any deviation from, and why? Is each instructor in possession of a copy?

Location—Is it suitable?

Kit—Is the necessary kit at hand?

Instructor—Ability to instruct, knowledge, manner.

Class—Length of service, standard.

Subject—What does the class know about it already; is it entirely new; is it revision; is it boring repetition?

Time—Is too much time allowed for the subject?

Method of Teaching—Does the instructor take into account the previous knowledge of the class; does he talk too much instead of exercising the class; is the instruction practical and based on reality; are the men made to take an active interest; are charts and diagrams used when necessary; if the instruction is on tactics, are the lessons of musketry and marksmanship put into effect; are men encouraged to take part in discussions by means of intelligent questions; is full use made of the sandtable?

Progress—Get the class to demonstrate what they are learning or have learned about the subject.

Supervision—Is this being properly carried out by platoon commanders?

Officers must check on their acquaintance with programmes; with shortcomings and progress of their men; with T.Rs. and military literature.

Where possible, faults should be pointed out and remedied on the spot; in all cases, a discussion should follow the inspection at which all the points noted by the inspecting officer should be raised.

On completion of the inspection, the inspecting officer should draw up his report and set out faults and remedial action, together with any general suggestions he has to make. A copy of this report should go to the commanding officer of the unit concerned for necessary action.

Without close supervision there can be no progress. Battalion commanders supervise by regular inspections; company and platoon commanders, particularly the latter, by keeping in close and continuous touch with the training of their units, by directing and improving their N.C.O. instructors and by instructing themselves.

In order to supervise properly, the platoon commander must have a thorough knowledge of all subjects in the training syllabus and of instructional methods.

Proper supervision will enable him to determine the instructional ability of his N.C.O.'s and the standard of training of each man.

"The four freedoms of common humanity are as much elements of man's needs as air and sunlight, bread and salt. Deprive him of all these freedoms and he dies—deprive him of a part of them and a part of him withers. Give them to him in full and abundant measure and he will cross the threshold of a new age, the greatest age of man.

"These freedoms are the rights of men of every creed and every race, wherever they live. This is their heritage, long withheld. We of the United Nations have the power and the men and the will at last to assure man's heritage.

"The belief in the four freedoms of common humanity—the belief in man, created free, in the image of God—is the crucial difference between ourselves and the enemies we face today. In it lies the absolute unity of our alliance, opposed to the oneness of the evil we hate. Here is our strength, the source and promise of victory."—FRANKLIN D. ROOSEVELT.

91st Division Stakes

THE 91st Division Stakes was a grueling test of the physical capabilities of ninety-six officers and men that put a finishing touch to Camp White's physical conditioning program. To the contestants it was a good workout; to the division commander, Major General Charles H. Gerhardt, it was proof that the training cadre of the division was ready for filler replacements.

Participants were selected on a basis of their scores in the Division Decathlon which had previously tested their abilities in such elements as shooting pistol and rifle, overcoming obstacle courses, throwing grenades, and swimming the camp's treacherous Rogue River with pack and rifle.

Carrying combat pack and pistol, the entrants sprinted 150 yards to the pistol range, fired pistol and rifle (the latter at 300 yards), hurdled two obstacle courses, clambered through a maze of trenches, and ended up fording the swirling currents of the Rogue. The entire course was eight and one-half miles.

The winner of the Stakes and a set of four engraved goblets for first prize was Second Lieutenant F. F. Lash, who ran the course in two hours, ten minutes, and dropped but three points (these with ten rounds with the rifle at 300 yards). Lash, who had previously won the Decathlon, has been in the army since December 7 and came to Camp White in July.

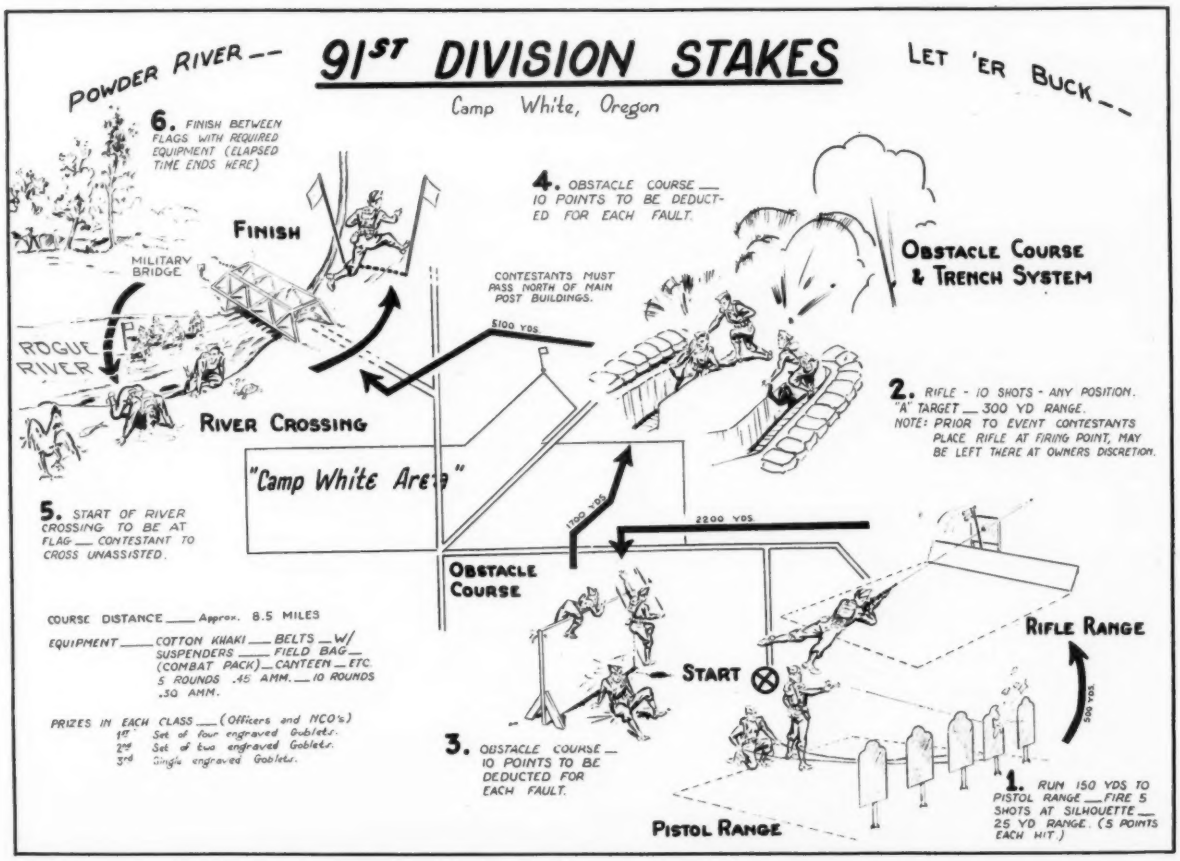
Chaplain R. D. Russell took second place with three points deducted, but his time of two hours, thirty-three minutes kept him from sharing first place. The chaplain, with nine years in the Infantry Reserve, also came to Camp White in July. He formerly served as post chaplain at Brooks Field, Texas, for two years.

Other place winners in the officers' class were the following:

Third place—Lieutenant Puntenney, Division Headquarters, with a total deduction of six. Fourth place—Lieutenant Joyce, 363d Infantry, with a deduction of six. Fifth place—Lieutenant Spence, 361st Infantry, with a deduction of seven. Sixth place—Lieutenant Morison, 916th Field Artillery, with a deduction of seven. Seventh place—Lieutenant Cordes, Division Artillery, with a deduction of eight.

First five winners in the noncommissioned officers' class were:

First place—Sergeant Bradley, 363d Infantry, with a deduction of four. Second place—Sergeant Hayes, 361st Infantry, with a deduction of seven. Third place—Staff Sergeant Hail, 362d Infantry, with a deduction of nine. Fourth place— Sergeant Noble, 361st Infantry, with a deduction of ten. Fifth place— Sergeant Hidalgo, 361st Infantry, with a deduction of eleven.


POWDER RIVER --
91ST DIVISION STAKES
Camp White, Oregon
LET 'ER BUCK --
6. FINISH BETWEEN FLAGS WITH REQUIRED EQUIPMENT (ELAPSED TIME ENDS HERE)
FINISH
MILITARY BRIDGE
ROGUE RIVER
RIVER CROSSING
4. OBSTACLE COURSE — 10 POINTS TO BE DEDUCTED FOR EACH FAULT.
CONTESTANTS MUST PASS NORTH OF MAIN POST BUILDINGS.
5100 YDS.
OBSTACLE COURSE & TRENCH SYSTEM
2. RIFLE - 10 SHOTS - ANY POSITION. "A" TARGET — 300 YD RANGE. NOTE: PRIOR TO EVENT CONTESTANTS PLACE RIFLE AT FIRING POINT, MAY BE LEFT THERE AT OWNERS DISCRETION.
"Camp White Area"
5. START OF RIVER CROSSING TO BE AT FLAG — CONTESTANT TO CROSS UNASSISTED.
1700 YDS.
2200 YDS.
OBSTACLE COURSE
COURSE DISTANCE — Approx. 8.5 MILES
EQUIPMENT — COTTON KHAKI — BELTS — W/ SUSPENDERS — FIELD BAG — (COMBAT PACK) — CANTEEN — ETC. 5 ROUNDS .45 AMM. — 10 ROUNDS .30 AMM.
PRIZES IN EACH CLASS — (Officers and NCO's)
1st Set of four engraved Goblets.
2nd Set of two engraved Goblets.
3rd Single engraved Goblets.
START
RIFLE RANGE
500 YDS.
3. OBSTACLE COURSE — 10 POINTS TO BE DEDUCTED FOR EACH FAULT.
1. RUN 150 YDS TO PISTOL RANGE — FIRE 5 SHOTS AT SILHOUETTE — 25 YD RANGE. (5 POINTS EACH HIT.)
PISTOL RANGE

NONCOM QUIZ

Foreign Map Reading*

BEFORE you start to solve this quiz, remember there are a number of differences between our maps and those used by foreign nations. Distances are measured in meters and kilometers instead of miles, yards and feet. Conventional signs, though resembling our own, are not quite the same.

This test is based on a portion of the German map of Barwalde "in der Neumark." Shown on its margin is information pertaining to scale and date of survey and printing. The contour interval is 5 *meters* and the magnetic declination is 22 *degrees west*. No grid system is present. You will need a protractor, ruler, pencil and scratch paper in solving the quiz.

Score 10 points for each part question. A grade of 70 or above is satisfactory. Answers may be found on page 78.

TEST QUESTIONS

1. Your unit, a *mechanized reconnaissance troop*, is in bivouac at BARWALDE. You have been ordered to take your section on a reconnaissance mission from NEUES SCHUTZENHAUS crossroads (upper right) along the main east-west highway to the town of ALT BLESSIN, a distance of 9.7 kilometers to the west.

a. What is this distance, expressed in miles?

b. At 22.5 mph, how many minutes would it take your section to cover this distance on an ordinary road march?

2. The Representative Fraction of this map is 1:25,000.

a. Is this a small, intermediate, medium, or large-scale map?

b. If you were to improvise a graphic scale showing 1,000 yards, how many inches would be needed to show this scale on the margin of the map?

3. Arriving at CR 49 (1,320 meters west of NEUES SCHUTZENHAUS) you are instructed to conduct lateral reconnaissance as far south as the crossroads at GEHOFT WACHTEL (lower center of map).

a. What is the road distance, in yards, between these two crossroads?

b. What is the highest elevation, in feet, on SPARR B hill (center of map)?

4. You consider the advisability of placing a ground observer at the triangulation station (71) on SPARR B hill.

a. Can your observer see the crossroads at GEHOFT WACHTEL? (Solve by means of similar triangle or profile method.)

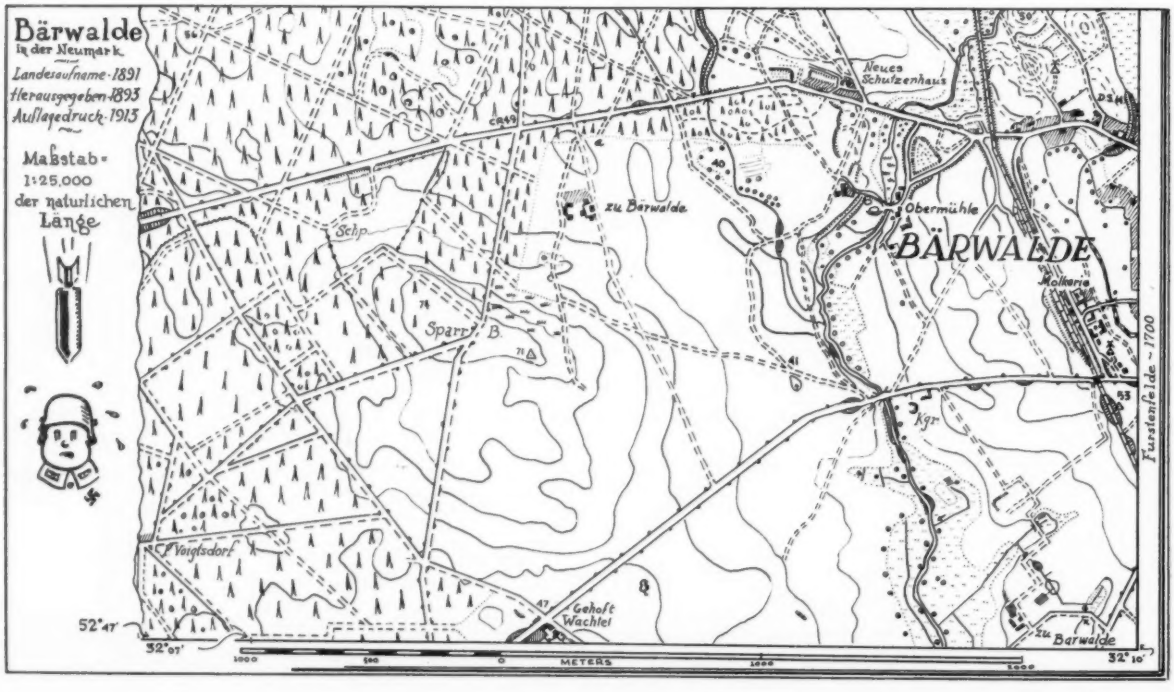
b. What is the magnetic azimuth of the line-of-sight from the triangulation station to GEHOFT WACHTEL?

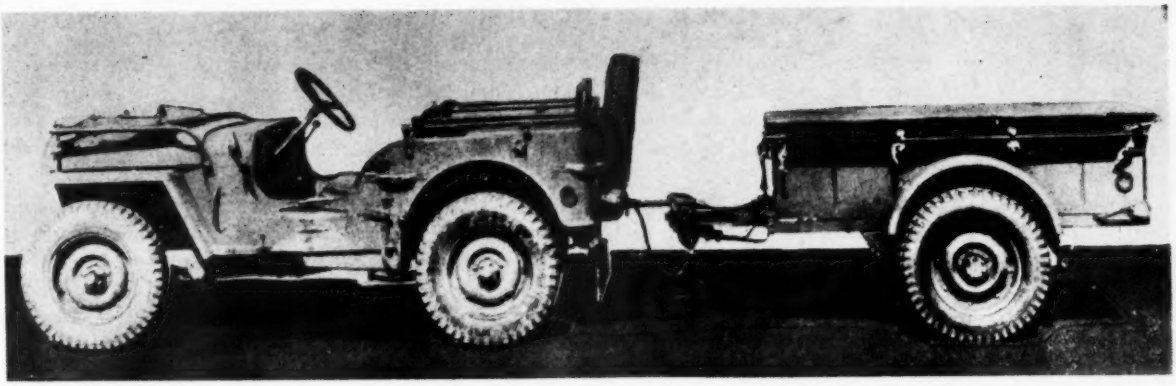
5. From GEHOFT WACHTEL your patrol returns to the ALT BLESSIN road, traveling via F VOIGTSDORF (lower left).

a. Is F VOIGTSDORF on higher or lower ground than GEHOFT WACHTEL?

b. What single U. S. military abbreviation appears on this map?

*Dept. of Tactics, The Cavalry School. (Answers on page 78.)





Horse-Bantam Cavalry

*By Brigadier General K. S. Bradford**

THERE is in existence an old photograph of General Custer's cavalry command, lined up on the plains of Kansas just prior to the start of his march of exploration to the Black Hills of South Dakota—a distance of about 800 miles. Contrary to general belief, Custer did not live off the country on this march, but carried his supplies with him, as evidenced by the presence in the photograph of what appear to be several hundred escort wagons, loaded and ready to move. The very name "escort" wagon shows that this type of transportation was designed to accompany the command. Loaded escort wagons make average daily marches of only about 15 miles, at an average rate of about 2½ miles per hour. Cavalry, dependent upon this method of supply, was therefore limited to the same slow rate.

With the introduction of the gasoline motor into army organization, the motor truck was immediately seized upon to increase the strategical or road mobility of cavalry. Supplanting the escort wagon for supply purposes, the supply truck allows the horses to exploit their mobility fully. On recent maneuvers, including those in Louisiana, horse units have experienced little difficulty in marching 40 to 50 miles per day, with no worry about their supplies being able to keep up. No one would think of returning to horse-drawn supply for cavalry.

In spite of the two to three hundred per cent increase in strategical mobility, which the motor truck permits, the strategical mobility of cavalry, as such, is practically nothing compared with that of completely motorized units. However, a way has been found to offset this discrepancy by using larger semi-trailers to portee horse units, when they must move a longer distance than a single day's march in a short time. This was also amply demonstrated in the last Louisiana maneuvers. Therefore, when semi-trailers are available, cavalry can be moved over the road at approximately the same rate as fully motorized troops.

The really distinctive characteristic of cavalry horse units, however, is their tactical, or cross-country, mobility, which, in difficult terrain, actually exceeds that of any known type of ground arm. This again was definitely demonstrated many times in the Louisiana maneuvers.

The cavalry division includes, however, in addition to horse units, a number of partially or completely motorized units, such as regimental headquarters and service troops, brigade and division headquarters troops, signal, ordnance, and division artillery headquarters troops, and reconnaissance, engineer, medical and quartermaster squadrons. These units are equipped in great part with many types of large, heavy and cumbersome vehicles, such as 2½-ton trucks and larger. These vehicles definitely jeopardize the cross-country, or battlefield, mobility of the division as a whole.

By associating together in the same divisional organization, the fastest cross-country, animate object of military value—that is, the horse—with some of the slowest cross-country types of motor vehicles, the most distinctive asset of cavalry is in a fair way to being destroyed. The horse, on the contrary, should be coupled intimately, as far as possible, with the lightest and fastest type of motor vehicle—those with the greatest degree of off-the-road mobility. This vehicle is unquestionably the ¼-ton truck, or jeep, peep or bantam, as it is variously called.

The ¼-ton truck is ideal for certain command, communication, reconnaissance and combat functions, in which it has almost as much tactical mobility as the horse and, on many missions, saves a lot of horseflesh. It can carry three men with complete equipment, arms and ammunition. The latest type of radio equipment

*1st Cavalry Division.

can be installed in it. It can carry light infantry telephone wire and can transport sick and wounded. It can tow the 37mm antitank gun and, in tandem, probably the 75mm howitzer and possibly the 105mm howitzer as well.

Now that a suitable ¼-ton trailer has been designed for the ¼-ton truck, a number of vexing supply problems can also be solved. This trailer can be used for transporting such items as: small cooking stoves, cooking utensils and rations; forage for horses; gasoline and water; horse troughs and pumps; a horseshoers' forge with tools and horseshoes; ammunition and spare parts for weapons; light emergency equipment, such as an overhead cable and possibly a light bridge for the passage of men, horses and ¼-ton trucks over streams; personnel water point equipment; extra reels of telephone wire; special combat equipment, such as antitank mines, rifle grenades, decontaminating units and smoke pots; radio repair parts; vehicular tools and parts for ¼-ton trucks and trailers; and medical, veterinary and chaplain's supplies, as well as light quartermaster and ordnance supplies and field office equipment.

To digress a moment, the question naturally arises then, if the ¼-ton truck and the ¼-ton trailer have such a variety of uses, why not mount the whole cavalry division in this type of vehicle and eliminate the horse cavalry? The answer to this is simply that the small motor vehicle, in spite of its many admirable qualities, still cannot match the horse in flexibility of movement through woods, over streams, across rough country, over mountains, at night, in extremes of climate and bad weather, and when silence is necessary for surprise. This has been proven many times in recent maneuvers of the 1st Cavalry Division. Moreover, the road space occupied by the number of men in a cavalry division mounted in jeeps, would be many times that of the division mounted as at present, mostly on horses, but supported by motors. Finally, our recent experience in shortage of rubber and fuel must convince the most skeptical that it is impractical to mount the whole army of up to 10,000,000 men in motors, and that this enormous number of individuals will move, if they are to move at all, on a combination of every known type of transportation from the transport airplane to shank's mare.

To return to the original discussion, it would be perfectly simple to restrict all command, communication, reconnaissance and antitank units in the cavalry division to the ¼-ton truck with trailer. This has already been accomplished in part. It will be more difficult to do the same thing for engineer, ordnance, medical and quartermaster units, but, by breaking down loads, it can be accomplished to a much greater degree than has been done to date. The more the problem is contemplated, the more evident it becomes that many heavy vehicles are in the division only for the purpose of assisting other heavy vehicles. For instance, the wrecker truck exists only to assist other heavy trucks; and the bulldozer, to prepare ground for the passage of heavy trucks. If all of the heavy trucks were eliminated, the need for the wrecker and the bulldozer would automatically disappear.

A determined effort to replace as many as possible of the larger vehicles by smaller ones will result in the elimination of many more or less useless items of impedimenta, which are still carried into the field as luxuries for use in rest camps. It should also lead to a study looking toward the simplification of our field ration, which is unduly complicated, and to the redesign of many items of individual and organization equipment along lighter and less bulky lines.

The ¼-ton truck is so simple to operate and to maintain that it is unnecessary to have drivers especially designated as such. Men with other principal duties, such as radio operators, cooks, horseshoers, clerks, engineers, signalmen, and so on, can drive in addition to their other duties. If this principle is adopted, it will lead to a reduction in personnel and, in turn, to a reduction in the bulk of supplies necessary.

Although not based on combat experience, this discussion is not entirely a theoretical one, as it is based upon the results of a number of regimental, brigade, division, corps and army maneuvers in both the near-desert country of West Texas and the wooded, well-watered area of Louisiana. Experience in these tests has shown definitely that the cavalry division should retain its combination of horse and motorized units, but that the motorized units should be restricted, insofar as possible, to the smallest, lightest type of motor vehicle; that is, the ¼-ton truck and the ¼-ton trailer.

Solution of Noncom Quiz

1. *a.* Approximately six miles.
   b. Approximately 16 minutes.

2. *a.* Large-scale map.
   b. 1.44 inches.

3. *a.* 2,464 yards, approximately.
   b. 244 feet, approximately.

4. *a.* No. GEHOFT WACHTEL is in defilade.
   b. 198° magnetic.

5. *a.* Higher. (It lies between the 50-meter and 55-meter grid lines.)
   b. CR 49 (Crossroads. This abbreviation was added by the author, and was not a part of the original map.)

Rough and Tough!

By 1st Lieutenant Clarence T. Lantz, Cavalry*

"TANKS and armored cars can be destroyed only by tough and determined fighting men who are masters of their weapons. Tank destroyer soldiers are taught that they must be superior soldiers. The moral qualities of aggressiveness, group spirit, and pride in an arduous and dangerous combat mission must pervade each tank destroyer unit. All ranks must possess a high sense of loyalty and confidence with regard to their comrades and leaders, and a conscious pride in their organization."

The above description, taken from the Tank Destroyer Field Manual, gives the reader a fair idea of the type of men that a tank destroyer outfit must have. But, as almost everyone already knows, the average trainee who comes from the Replacement Training Center is far from being the superman that the field manual so glibly describes.

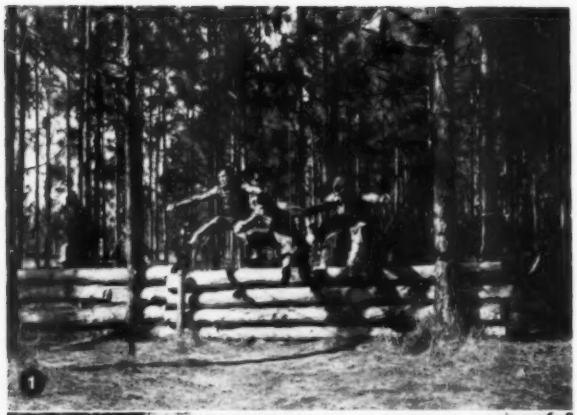
The question then seems to be one of making the new "fillers" into the tough killers that a tank destroyer unit needs in order to accomplish its mission with minimum losses.

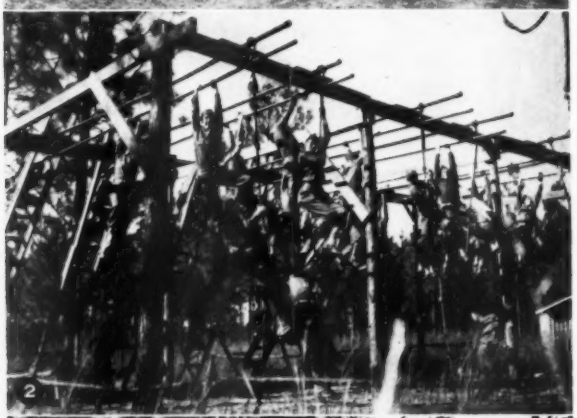
The 823d Tank Destroyer Battalion, under the command of Major Robert W. Rayburn, Cavalry, has been and is faced with the problem of turning Replacement Training Center material into commando-like fighting men.

A program was worked out for the battalion with a threefold objective in mind; first, to properly condition the men; second, to install an aggressive fighting spirit

*823d Tank Destroyer Battalion.

Over the first big obstacle on the 823d "Tank Busters" super obstacle course. (Twelve feet high.)





throughout the organization; and, third, to create in the men loyalty for and confidence in their organization and leaders.

The first step in the organizational program was the establishment of a half-hour of calisthenics each morning for everyone in the battalion. This served to alert the men and start the conditioning process.

The second step in the program consisted of establishing a short but tough obstacle course, which everyone in the outfit was expected to conquer each day.

At first the battalion was satisfied to go over the course once or twice a day, but after a week or two everyone was voluntarily going through the pace two, three, and four times without stopping for even a short rest. The competitive spirit of the battalion was aroused, and the officers and men tried to outdo each other in the number of times that they could struggle through without stopping. The leaders were soon galloping around approximately ten times daily without a halt; and the average man, about five times.

Feeling that the short obstacle course had reached its peak in training and conditioning the men, Major Rayburn and Second Lieutenant E. W. McInnis, put their heads together and devised the "Get Tough" obstacle course.

This new course started out as a simple two-and-one-half-mile affair, but quickly grew to a five-mile course that is now one of the roughest and toughest in existence. It starts out innocently enough with a sprint of a few hundred yards and a few three-to-four-foot hurdles. But then comes the first big barrier—a fifteen-foot water jump—where some of the less agile get wet. Next there follows a cross-country race for about a mile, then an eight-foot dugout that forces the men into a slow trot.

After some more sprinting the contestants arrive at another barrier—the camp swimming pool—and although the early mornings are usually brisk, the men plunge right into the water and swim fully clothed, across the sixty-foot pool. Then, dripping wet from their fling at "Swimmando" tactics, the soldiers once again go into a sprint. The wet clothing hampers them a little, but it is all in a day's "fun."

The more-or-less tired men next come to a grenade course. Here they flop on their bellies and crawl vigorously for about thirty-five yards to the top of a knoll, where they hurl hand grenades at a machine-gun emplacement some fifty yards away. Because of the competitive nature of the marathon, they are forced to stay at this point until they have hit the emplacement, which usually takes only one or two tries. After destroying the

SOME OF THE OBSTACLES IN THE 823D TANK DESTROYER'S "TANK BUSTERS" COURSE

1—Over the hurdles. 2—One of the more formidable barriers is sixteen feet high. 3—Up and over without the use of hands. 4—Not so high but plenty tough to get by.

enemy position, the men push on along the bottom of a draw where the grass is thick and the terrain rugged. Through weeds, underbrush, and thickly wooded areas they sprint over the toughest ground available and come to the next obstacle in the course, which consists of a twelve-foot rope to be climbed hand-over-hand (no knots to be credited with an assist). After climbing the rope, and still perched twelve feet up, the men have to walk a log sixteen feet long and jump off the far end into a sawdust pit. Here they start the last lap of the grueling marathon, and each man usually finds just a little more energy to manage a last-minute burst of speed, and possibly capture the honor of being first across the finish line.

On this last stretch, at top speed, the soldiers cross a log over a twenty-foot-wide, sixteen-foot-deep trench; climb another rope—this time sixteen feet up—and race down a ladder on the other side. Then they conquer a series of minor obstacles, climb over a few walls, crawl through some barbed-wire tunnels, and arrive finally at the last major obstacle. Here they climb a fifteen-foot ladder, hand-over-hand, continue Tarzan-fashion, hand-over-hand along a twenty-foot pipe, and slide down a rope at the far end.

After a few minor barriers and a climb over a seven-foot wall, they come at last to the pot at "the end of the rainbow"—the finish line. By this time the soldiers have run steadily over a course five miles in length, and have overcome varied and difficult obstacles for approximately thirty-five minutes.

Hot coffee and a very welcome cigarette await the men at the finish line where each company then furnishes trucks to take the tired, but happy, soldiers back to a hot shower and dry clothes.

The third step in the battalion conditioning program was the establishment of hand-to-hand fighting classes. Better than just reading a book on the subject and half-heartedly trying out a few holds, the men here are taught a few blows and holds as well. The teaching program in these classes emphasizes demonstration and practice; then more and more practice until everyone can react instantly to any bare-hand combat situation. If a man doesn't react instantly, he usually finds himself on the ground before he has a chance to figure out what should have been the proper move.

The 823d Tank Destroyer Battalion furthers its program by the use of psychology. The method employed is simple but very effective. Every press release sent out by the battalion and the camp emphasizes the toughness of the outfit. The men read and hear how tough they are supposed to be, and unconsciously try to live up to their reputation. This causes them to exert themselves

"GET TOUGH" HAND-TO-HAND COMBAT CLASS

1—The strangle hold. 2—Throw 'em hard. 3—A new technique in "getting tough." 4—Disarming an enemy soldier of his knife.

still more toward getting tough, and more important yet, toward getting into fighting trim.

By using the three physical conditioning steps, plus the psychological one, the battalion has achieved remarkable results in turning raw material into the kind of superior soldiers described in the Tank Destroyer Field Manual. In fact, the competitive spirit in the battalion has made the sometimes dreaded calisthenics a privilege, for every man wants to get in better shape, and thus beat the man on the next bunk—or the company commander—around the big course each week.

The obstacle-course program has replaced the mountain activities in which the battalion participated while stationed in Colorado. There, it climbed one major peak each week. Among those scaled were Pike's Peak, Mount Rosa, and Cheyenne Mountain. In climbing Pike's Peak the Tank Destroyers were the first United States military unit to climb the peak in formation, and on the same climb they reached the highest altitude ever attained by a United States ground force unit up to that time, August, 1942.

As twenty-eight of the officers and the majority of the enlisted cadre were originally cavalrymen, the battalion has plenty of the half-as-big-and-twice-as-tough spirit. From the "CO" down to the lowliest "buck" the men claim that they belong to the roughest, toughest outfit in the whole army, and are willing to prove it.

★ ★ ★ ★

A Few Hints to New Officers

By Major John A. Mann

Know how to wear your uniform and see that you do so at all times.

Don't buy cheap uniforms, especially boots; THIS WOULD BE A GREAT MISTAKE.

Learn this and NEVER FORGET IT: THE FIRST DUTY OF A SOLDIER IS TO OBEY ORDERS. In the absence of orders or instructions, do what you think your commanding officer would do if he were present.

Pick out some officer to imitate, but be sure he is a good soldier.

Don't be afraid to express your opinion to your commanding officer, but use good judgment in doing so. Any good commanding officer will respect your opinion and listen to you within reason. BUT—When he gives you his final decision, BE SURE YOU CARRY IT OUT, REGARDLESS OF YOUR PERSONAL OPINION.

From time to time an "Officer's Efficiency Report" will be made out on you by your immediate commanding officer. You are not entitled to see it; however, if he makes an unfavorable report on you he is required to let you know about it in writing. Here are some of the things on which you are rated:

Physical activity
Physical endurance
Military bearing and neatness
Attention to duty
Coöperation
Horsemanship
Ability as an instructor
Tactical handling of troops
Initiative
Intelligence
Force
Judgment and common sense
Leadership
Horsemastership
Administrative duties
Ability to handle men

Watch your drinking. Use good judgment here.

Don't talk too much. Keep your eyes and ears open and your mouth shut!

Don't give excuses. Get the job done if you have to stay up all night.

Take care of your men, your platoon; fight for them; look to their comfort; demand their respect; be fair and still strict. Don't try to be popular. If you do your job, the popularity will take care of itself.

Be loyal to your superiors. This is most important.

Remember that before you are competent to *give* orders, you must be able to *take* them.

A man who honestly tries to do his best seldom makes a very serious mistake.

Study the regulations. Know more than your men, then teach it to them.

A final word: Don't talk too much! If you open your mouth too much you will probably put your foot in it!

To Pack Hot Food Containers

*By Captain William P. Jones, Jr.**

HOT FOOD CONTAINERS are efficient thermos-type tubs that weigh approximately forty pounds. They contain sufficient trays and compartments to keep the various components of the ration separated; the whole being covered with a thick layer of insulating material. They are excellent articles of equipment and make possible the serving of hot foods on the march or while in position. Their only drawback is the fact that they are bulky, rather heavy, and difficult to carry by hand for any great distance. This characteristic, particularly, discourages their use by organizations that do not have vehicular transportation as an integral part of their equipment.

The problem of delivering a hot noon meal to the troop arose one day last spring during maneuvers. The weather was raw, and the tactical situation required the troop to be in position at dawn and remain throughout the entire day. The sector assigned to the regiment was large, and while a part of the troop was in reserve in the vicinity of the troop kitchen, more than half of it was on outpost duty.

The first sergeant, supply sergeant, and mess sergeant were called into consultation. A Phillips pack saddle was placed on a wooden dummy horse and various slings and lashes were tried with small success. Several experiments were made, but none of them proved satisfactory. The containers, being round, would not ride on the nearly flat surface of the Phillips pack saddle without slipping or rolling.

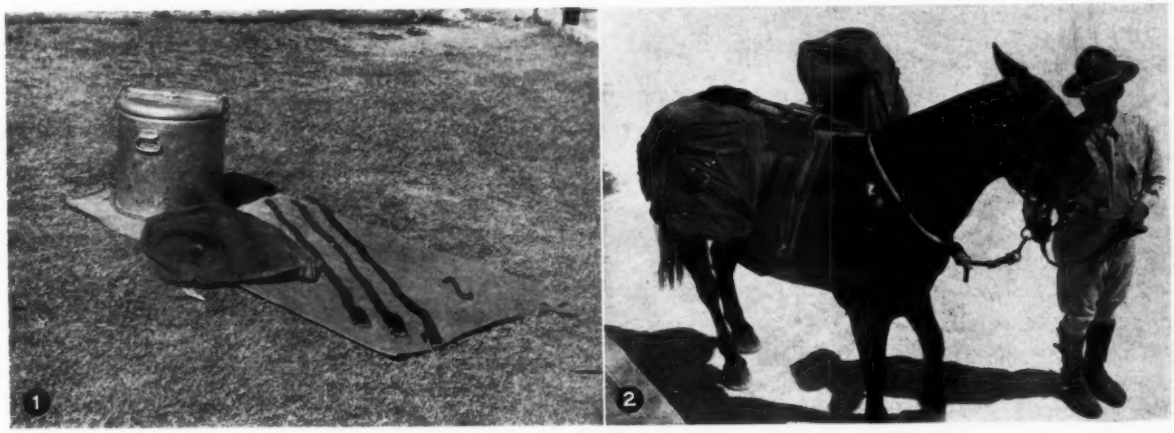
Then, at last, First Sergeant Thornton Taylor hit on the proper combination of straps. Like many useful inventions and discoveries, the solution was simple as well as easy to improvise and use.

The hot-food-container carrier, as developed by Sergeant Taylor, consists of three straps, and an "S" hook —one unit for each container. For straps, stirrup leathers serve admirably. An adequate length has been found to be four feet, nine inches. The "S" hooks can be made by any blacksmith out of a cast shoe or a piece of wrought iron. Its overall length is six and one-half inches. An O.D. canvas cover for each container has been made to eliminate reflection.

To load the containers, one bend of the hook is placed over the hanger bar, and one handle of the container is hooked over the other bend. The three straps are passed through the outside handle; one of them going through each of the three staples at the foot of the saddle. As shown in the photograph, the lateral straps pass around the container and prevent forward and backward motion, while the middle strap prevents bouncing. The single "S" hook fastening the inside handle to the hanger bar has been found to give sufficient vertical support.

The load is not too great, and a good pack animal can carry the hot-food-container pack with as much ease as he can carry the mortar pack or any of the machine-gun loads. The total weight of the pack and the two containers (empty) is 127 pounds, and even if the containers were filled with the heaviest sort of food, the gross weight would be scarcely greater than that of the mortar load. In addition, it rides better than other pack loads. Even when it is carried at extended gaits, there is none of the bouncing, rolling, or rocking apparent in other pack loads.

*9th Cavalry.



1—One unit of the hoot-food-container carrier. 2—The carrier from above. Note the "S" hooks and the lateral support given by the straps. The cover was made by the troop saddler out of salvage tentage.

Check List for Military Personnel Ordered to Foreign Duty*

ALL military personnel ordered to foreign duty, before departing from their home stations, should have in their possession a check list similar to the one listed below. If the procedure outlined in the check list is followed, all military personnel arriving at their oversea destinations will have little if any trouble in getting esablished at their new stations.

b. So far as possible military personnel will be processed at their home stations before departing therefrom.

2. Check list.—*a. Administrative.*

(1) *Officer's Identification Card (W. D., A. G. O. Form No. 65-1).*—A threefold card with photograph, fingerprints, signature. Yes No

(2) *Identification tags, metal* (two), showing— Yes No
- (*a*) Full name Yes No
- (*b*) Army serial number Yes No
- (*c*) Name and address of person to be notified in case of emergency.
- (*d*) Date of tetanus inoculation. Yes No
- (*e*) Blood type. Yes No
- (*f*) Religion if desired. Yes No

(3) *Power of attorney.* Yes No
- (*a*) *General.*—For any use but cashing Government checks. Yes No
- (*b*) *Special.*—For use only in cashing Government checks. Yes No

(4) *Will.*—Officers going overseas should make a will. Yes No

(5) *Statement of service.*—If a National Guard Officer or Reserve officer. Yes No

(8) *Passport.*—If passport is required do you have one? Yes No

(9) *Visas.*—If passport is issued, has it been visaed for all countries in transit? Yes No

(10) *Passport photographs.*—Seven extra copies. Yes No

(11) *Information booklets.*—Have you been provided with information booklet on the country to which you are going? Yes No

(12) *W. D., A. G. O. Form No. 41.*—(Designation or Change in Address of beneficiary.) Yes No

(13) *W. D., A. G. O. Form No. 43.*—(Emergency addressee and Personal Property Card.) Yes No

(14) *APO number.*—Do you have your APO number? Yes No

(15) *Clothing.*—Is your uniform complete? Yes No

(16) *Field equipment.*—Has complete field equipment been issued to you by the quartermaster? Yes No

(17) *Air priority.*—If traveling by air has a priority been arranged for you? Yes No

b. Financial.

(1) *Allotments.*—Have you made allotments of pay to cover any of the following: Yes No
- (*a*) Self. Yes No
- (*b*) Dependents. Yes No
- (*c*) Commercial insurance. Yes No
- (*d*) National Service Life Insurance. Yes No
- (*e*) War Risk Insurance. Yes No

(2) *Application for pay reservation for War Bonds.* Yes No

(3) *Uniform allowance.*—Are you eligible? If so, do you have copies of statement of service and of original active duty orders? Yes No

(4) *Mileage allowance.*—Are you entitled to mileage from last station? If travel was performed by transportation request, you must have two copies of W. D., T. C. (Q. M. C.) Form No. 207 (Transportation Certificate for Passenger Travel). Yes No

(5) *Per diem.*—Are you traveling on a per diem? Yes No

(6) *Rental certificate.*—Showing nonassignment or termination of quarters at last station. Yes No

(7) *Pay data card.*—Showing pay and allowances. Is it up to date, showing all deductions? Yes No

c. Medical.

(1) *Immunization Register (W. D., M. D. form No. 81).*
- (*a*) *Required:*
  1. Smallpox, one vaccination. Yes No
  2. Typhoid paratyphoid, three injections, one-week intervals. Yes No
  3. Tetanus, three injections, 3-week intervals. Yes No
- (*b*) *When ordered:*
  1. Yellow fever, one injection. Yes No
  2. Cholera, three injections, one-week intervals. Yes No
  3. Typhus, three injections, one-week intervals. Yes No

(2) *Blood type.*—Blood type should be shown on register and identification tags. Yes No

(3) *Dental attention.*—All teeth should be Yes No

*See W. D. 1942 Circular 333 for full details.

checked for cavities and taken care of before departure.

(4) *Glasses.*—If glasses are worn, an extra pair should be carried. Yes No

(5) *Physical inspection.*

(*a*) At home station. Yes No

(*b*) At Port of Embarkation. Yes No

Physical inspection to be made at port of embarkation if forty-eight hours have elapsed since physical examination at home station.

2. Military personnel ordered into Washington, D. C., prior to their departure for an oversea station will contact the A. G. O. Travel Bureau and have the status of their processing checked. If processing has not been completed the A. G. O. Travel Bureau will render the necessary assistance in completing same.

3. It is proposed to set up in the near future additional travel bureaus at key points in the United States. Upon organization the location of these additional bureaus will be published. Thereafter military personnel going overseas will contact the travel bureau nearest their point of departure from the United States.

Cavalry and the Australian Front*

MIGHT it not be possible that General MacArthur is finding that the northern coastline of Australia, to the east and west of the Gulf of Carpentaria is a "border" that calls for cavalry, to properly patrol and defend it?

Is is not probable that much of this long coastline cannot be reached from inland by motor drawn vehicles? This in itself would preclude the rapid concentration of infantry at such points of invasion.

Is it not possible that sudden enemy action and the evading of our naval patrols, might conceivably end in the Japanese landing and establishing a mainland base on the Australian continent? They have done just this in a continuous sweep down from Japan, why not here? The very extent of the coastline lends itself to the favorable execution of such plans.

But on the other hand, undoubtedly the Australian and American command has foreseen such an eventuality. It is inconceivable that they will have failed to station troops to patrol this danger zone and guard it. Certainly they will have naval and air patrols constantly on the alert to warn of any attempted landing. Now, given that the enemy is sighted, the warning is given. Can troops be concentrated at sufficient speed to prevent a landing in force?

If the section of coast selected by the invaders is suitable for rapid movement of troops by motor from inland, also of guns; then it is probable that the warning will serve its purpose. But would the well-informed Japanese, and we must feel assured that they are so informed, land in such territory? Is it not probable, even certain, that they would choose a sector where their landing would be least hampered from a rapid concentration of coast defense? Thus they would have more time to establish themselves, free from molestation in their initial effort at establishment.

True, that if they have been sighted by air and sea patrols they will be subjected to gun and bomb attack from these arms, but if there is no serious resistance from land forces, these invaders can establish a base from which it will not be easy to dislodge them, they have done this before.

Presuming that the foregoing is logical, not a highly colored picture by some rabid pessimist, but based on precedent set by this same enemy in this same general seat of war, then, might not this be worth consideration?

Take the sectors that are inaccessible to motors, therefore also to infantry. Infantry cannot move fast enough for any distance on foot to reach a danger point before that danger has ceased to be merely a threat. The same, of course, holds true for artillery, for while infantry might arrive after a time, artillery would not be even able to reach a position at all.

Why, then, would not large units of our well-organized and equipped horse cavalry be the answer? We do not offer suggestions as to strength, merely an outline from a horseman's point of view.

Let it be supposed cavalry concentrations are made at strategically suitable locations, allowing the unit at each camp to reach out about twenty to twenty-five miles in either of the directions to be defended or patrolled. By coördination with the air force, that unit is then warned of the danger point. It instantly moves out to prepare a defensive action against the invaders. In fact, by the very nature of its sudden appearance at a presumably inaccessible point, it has converted that defense into an offensive action.

Remember, the U. S. Cavalry is trained superbly to dismount and fight on foot, the command used to be "with rifles dismount," the rapidity with which three men of each set of fours would dismount, take rifle from boot, turn reins over to the mounted man and rush into formation for action was amazing. The lead horses meanwhile being led rapidly to cover in the rear.

While this unit engages the enemy, the adjacent units are moving up to further assist in the attack, by forced march it is true, but a forced march for men and horses, over going that prohibits the use of motors is part of their training. They have done it before and can do it now.

*Reprinted from *The Chronicle*

Book Reviews

MEN AT WAR. The Best War Stories of All Time. Edited with an Introduction by Ernest Hemingway. Crown Publishers, New York. 1072 pp. 1942. $3.00.

This excellent anthology is a compilation of the most universal battle experiences of man since he began to record his wars and his reactions in them.

Ernest Hemingway is particularly well suited to be the compiler of this anthology. Having taken part and been wounded in the last war, he understands something of the organized violence that is war. It is his own literary forte.

There are eighty-two stories in *Men at War* ranging in length from three pages to ninety and in date from "David and Goliath" to "Midway." Most of Hemingway's selections from ancient history, significantly, are tales of expeditionary forces that faced tremendous odds and withstood severe hardships. Obviously, the parallel that the editor intends the reader to draw is that of the task which this country now faces in a global war. The relevant selections are on Cæsar's invasion of Britain, the Battle of Hastings, two stories of the Crusades, and an excerpt from Prescott's history of Cortes' conquest of Mexico.

Everyone likes to quarrel with the choice of an anthologist and to substitute his own favorites, but Hemingway's criteria—the most enduring of human values—are almost unassailable. Because his standards of truth-telling are high, it does not follow that the stories are dull or necessarily high-brow. There is action, and plenty of it, in such stories as "The Blocking of Zeebrugge," "Falling Through Space," "Air Battle," "Gallipoli," "Her Privates We," and Tolstoy's "Bagration's Rearguard Action." The longest selection is Stephen Crane's magnificent "The Red Badge of Courage," the ageless story of a boy facing the doubts of his first battle.

Hemingway says in his introduction that this book will not tell you how to die. But by providing a superbly told record of how other men have fought and died, it may help those who are about to fight to realize that they will encounter nothing worse than other men have faced.—L. B. C.

✦ ✦ ✦

IN THE ARMY NOW. By Private Gene Gach. Dodd, Mead and Company. New York. 282 pp. $2.00.

In this book Private Gach has presented a colorful story of his life since he entered the army as a cavalry selectee. It is not merely an account of events and contacts, as such books often turn out to be. It is rather a vivid novel of life in the army as seen from the bottom up. Characters emerge and grow into real and colorful personalities. The conversation is genuine except for perhaps too much profanity.

Two features in Private Gach's book are particularly outstanding.

The single pages of impressions, apparently jotted down hurriedly and at random, that are thrown in between each of the chapters are like side remarks in a play. They add a contemplative note to the human qualities of the story.

The last chapter contains a very fine collection of "round robin" remarks that give a soldier's summary of what the army is. A few of these are quoted here:

"It's a realizing that learning things 'The Army Way' with the habit of doing things one sure step at a time will stay with you forever, giving you advantages over people who were never in the army.

"It's so much admiring the way one officer salutes, that you cross the street to salute him, and have him return your salute.

"It's surprising yourself by the amount of pride you unconsciously take in saying 'we' and 'my regiment.'"

Private Gach is with one of the horse cavalry regiments and had an article in the July-August issue of The Cavalry Journal.

✦ ✦ ✦

THERE GO THE SHIPS. By Robert Carse. William Morrow and Company. New York. 156 pp. $2.00.

This is the dramatic story of the merchant marine—the ships and the men who carry the cargos of war supplies to the four corners of the fighting globe.

Robert Carse is an able writer, and he tells in this book a thrilling story of his voyage as an able bodied seaman through the North Sea death trap to Murmansk with a cargo of T.N.T.

"This is the story of how we took the ships through the submarines, the ice, the mines, the planes, and how we brought some of them home again.

"When we started out, we were just a simple bunch of guys that you'd find in any union hall or along any dock in an American port. But we had to fight for our lives, and our ships, and we had to take through to our Russian allies the planes, and tanks, the explosives, the ammunition and trucks that had been promised them. . . ."

This is another of those books that "everyone should read."

✦ ✦ ✦

ARMY POSTS AND TOWNS (The Baedeker of the Army). By Charles J. Sullivan. Haynes Corporation. Los Angeles, California. 4th edition, 1942. 199 pp. $3.00.

The preface to the third edition of this book, published in the spring of 1942, stated, "The reason for this book is its very evident need." That this was true is evidenced by the fact that already a fourth edition has been made necessary. A brief outline of each Army Post gives the transportation facilities, population and geographical location of the Post Town, type of quarters, names of hotels and rates, schools, climate, and type of clothes needed. Most of the recently established forts, camps, and air fields are included.

Additional information covers corps areas, personnel, War Department reorganization, insignia, decorations, and pay table.

Army Posts and Towns is a well organized, valuable, and handy reference for many desks at this time.

GAS WARFARE. By Colonel Alden H. Waitt, Chemical Warfare Service. Duell, Sloan & Pearce, Inc., New York. 274 pp., Appendix and Index. $2.75.

Clearly and concisely this book describes the little known facts about chemical warfare.

Because poison gas has not yet been introduced into this war, many professional soldiers, as well as civilians, verlook its importance if, or when, it is introduced. The very fact that to date in World War II poison gas has been used only by the Japanese in China—and that more or less experimentally—indicates something of the potency of its use and the hesitancy with which it will be introduced. Its use in 1917-18 established the record for World War I that no other weapon produced as many permanent casualties with as few deaths as chemical warfare.

Gas Warfare is divided into three parts. Part One describes the properties and agents of chemical warfare, suffocating gases, blister gases, tear gases, screening smokes and incendiaries. Part Two outlines the uses of chemical weapons and their employment in battle. Part Three instructs both soldier and civilian in protection against gases and in first aid treatment of gas casualties.

This is a valuable book—easy to read and easy to understand—about a weapon that the enemy may hold in reserve to spring in his final defense.

* * *

MILITARY AND NAVAL MAPS AND GUIDES. By William W. Flexner and Gordon L. Walker. The Dryden Press. New York. 95 pp. Well illustrated. $1.00.

Dr. Flexner and Dr. Walker of the Departments of Mathematics of Cornell University and the University of Delaware, respectively, have presented in this small book a splendid introduction to the general principles of the construction and use of maps.

The five maps chosen are the Gnomonic (or Great Circle), the Mercator, the Lambert Conformal Conic with Two Standard Parallels, the Stereographic, and the American Polyconic. The subjects are treated in such a manner that they are available to students having no mathematics beyond a first course in plane trigonometry.

Separate chapters are devoted to Radio Bearings, Radio Location of Aircraft, and Aerial Mapping.

* * *

BLUEPRINT FOR VICTORY. By Homer Brett. D. Appleton-Century. New York. 204 pp. $1.75.

In *Blueprint for Victory* the author assumes the attitude of many pseudo-strategists—that he, Tom, Dick or Harry knows as much (or more) about how to win the war as do the men who have spent their lives in the military profession. He seems to think that most professional soldiers spend the biggest part of their careers "signing vouchers." In this book he offers his own suggestions for a "blueprint for victory" and concludes by saying. "The Russians deserve credit for the elimination of surplus Nazis, but nobody is killing any Japs to speak of. That is *our* business, and the American people are wondering when we are going to start running the war."

This book seems to ignore the fact that we have more than one war on more than one front at the same time.

HOW TO WIN IN HAND-TO-HAND FIGHTING

As taught to the British Commandos and U. S. Armed Forces

Get Tough!

By MAJOR W. E. FAIRBAIRN

At present Major Fairbairn is in the United States, on loan from the British Army, teaching close-combat to instructors of the U. S. Armed Forces.

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- **It isn't jiu-jutsu.**
- **It's "dirty fighting" raised to a science.**
- **It's 100% effective.**
- **It's a system so deadly** that it has the Nazis buffaloed. It has enabled the Commandos, (and now the Rangers!) to raid the French and Norwegian coasts at will—bringing back prisoners and leaving demoralized German garrisons in their wake. One British officer, Lord Lovett, led a Commando attack after being Major Fairbairn's pupil for only two weeks. When he returned from that raid he summed up the unfailing efficiency of this method in a two-word cable to the Major: "It works."

It is better than jiu-jutsu (judo). It is potent with or without weapons. It gets results *fast*. It serves every requirement of the man who can't call for help—who may have to battle several opponents, come out alive and bring in prisoners. "No book could be of more practical value to the individual soldier. Read it! Learn it! Practice it! The time may come when this book will be the means of saving your life."—*The Cavalry Journal.*

Illustrated.

$1

The Cavalry Journal

1719 K Street, N.W. Washington, D. C.

In The Army Now

By PRIVATE GENE GACH

. . . A colorful story of his life since he entered the army as a cavalry selectee. . . . Not merely an account of events and contacts, . . . rather a vivid novel of life in the army as seen from the bottom up.

$2.00

There Go The Ships

By ROBERT CARSE

"This is the story of how we took the ships through the submarines, the ice, the mines, the planes, and how we brought some of them home again."

This is another of those books that "everyone should read."

$2.00

They Were Expendable

By W. L. WHITE

This is the story of Motor Torpedo Boat Squadron 3 and their brilliant record in the Philippine Campaign.

Every man and woman should read it. (See Book Review, this issue.)

$2.00

No. F-23 on Cavalry Journal book list.

The Army Wife

By NANCY B. SHEA

A grand gift for the Army helpmate—young and old.

$2.50

No. G-5 on Cavalry Journal book list.

The Cavalry Journal

1719 K Street, N.W. Washington, D. C.

FOR PERMANENT VICTORY. By Captain Melvin M. Johnson, Jr. and Charles T. Haven. William Morrow & Company. 246 pp. $2.50.

This book is an analysis of this country's past wars, the one in which we are now involved, and our future course in wars as indicated by our past and present. It is an urgent plea that the United States cease its policy of letting the sword fall from the scabbard to lie rusting until its use is again imperative.

The authors point out that, like our British cousins, we have always prided ourselves on being law-abiding people; that we have established laws and law-enforcing agencies to ensure and keep the peace within our borders. Why, then, do we allow international gangsters to grow and not only destroy our much desired peace but threaten our very existence? Would it not be cheaper and easier to maintain an armed force and a nucleus of arms production that would enforce international peace?

Permanent victory must be permanent peace.

MECHANIZATION AND CULTURE. By Walter John Marx. B. Herbert Book Co., St. Louis, Mo. 225 pp. $2.50.

Although the subject matter of this book—the influence of machines upon human lives—is temporarily submerged by the war and a war-directed society, the problems presented herein are none-the-less important. The unanswered riddles of unemployment vs. labor-saving devises; destitution in the midst of plenty—have not been solved but merely interrupted and postponed by the war. The solution lies yet in the future.

Mechanization and Culture presents many problems of technocracy. Its many specific examples and authoritative references indicate painstaking research, but the reader is often impressed with a backward rather than a forward view—a restricted perspective that fails to perceive the dawn still behind the horizon.

WHAT THE CITIZEN SHOULD KNOW ABOUT CIVILIAN DEFENSE. By Walter D. Binger and Hilton H. Railey. W. W. Norton and Company, New York. 183 pp. $2.50.

In an attempt to educate our citizens in military and naval affairs and the problems of national defense (and a great portion of our civilians have kept themselves woefully uninformed) the publishers have herein added another comprehensive volume to the *Citizen Series*. The detailed descriptions of various types of bombs and how to obtain protection against them are of practical value to civilians as well as of interest to our armed forces.

One of the collaborators, a distinguished engineer, has adapted his experiences in wartime England to our own problems regarding the protection of civilian life and property against possible attack by hostile aircraft. The other author is a special writer on matters of civilian defense for the *New York Times*. Their elementary descriptions, accompanied by diagrams and illustrations, gives the reader a fundamental concept of air raids and their consequences which will forearm him for whatever may be in store.

SUBMARINE, The Story of Undersea Fighters. By Kendall Banning. Illustrated by Charles Rosner. Random House. New York. 52 pp. $1.00.

The author here presents not only accurate details but a thrilling description of the history, development, and activity of submarines. He even describes the training of submariners and life aboard their undersea craft.

Well illustrated, this compact, authoritative book is a complete coverage of the subject of submarines for the average well informed person who is interested in the implements and methods of today's war.

* * *

THE MAN WHO DARED TO CARE. By Mary Tarver Carroll. Longmans, Green and Company, 216 pp. $2.00.

This is the simple story of the life of General James Edward Oglethorpe who carved out a colony in the wilds of Georgia some two hundred years ago in order to give a "new deal" to imprisoned debtors from England.

As a student just out of Oxford, he had headed a committee for the investigation of England's *gaols*, and there he had found conditions so dastardly that men died of smallpox or slow starvation in dark dungeons because they had been unable to meet the endorsement on a note or perhaps a gambling debt. "Many people were sorry for the sufferings of the unfortunate, and many people gave of their time and means to help. But James Oglethorpe cared so deeply that he dared do something big about it. Setting the debtors free did not satisfy him. They must be helped to build their lives again."

So it was that James Oglethorpe fought for permission to found a colony of carefully chosen and worthy debtors, then in 1732 led that colony to Georgia. He spent ten years in the New World, built roads, mapped farms, and helped to shape a new country's destiny. He acquired no lands, was paid no money, and left no heirs. But he saw a nebulous dream take shape and live.

General Oglethorpe died in London in 1785, a few weeks after he paid his official visit to John Adams, the first Minister to the Court of Saint James' from the United States of America.

* * *

ARMY FOOD AND MESSING. Military Service Publishing Company, Harrisburg, Pa. Appendix and Index. 381 pp. $

This Manual needs little introduction. Formerly published under the title of *Manual of Mess Management*, it is already recognized as an authoritative reference for the army cook or baker. It is not an official publication but is rather a compilation under one cover of much valuable information on quantity feeding and of material found in the following official publications:

TM 10-405, The Army Cook.
TM 10-410, The Army Baker.
TM 10-205, Mess Management.
TM 10-210, Inspection of Subsistence Supplies.
FM 8-40, Field Sanitation.
FM 21-10, Military Sanitation and First Aid.

It is written not only for the mess officer or mess sergeant "but for every man in the organization whose duties affect the messing of the organization."

Principles Of War

By GENERAL CARL VON CLAUSEWITZ
(Translated from the German)

At last! Clausewitz's renowned outline for the conduct of war!

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ATTACK

By MAJOR F. O. MIKSCHE,
Czechoslovakian Army

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***Schwerpunkt* and *aufrollen* — the spearhead penetration of a frontal point and the ensuing disbursement for flank attacks — carefully explained.**

Every officer should read this book *now!*

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Officers' Guide

Ninth Edition

Incorporates many of the developments and changes that have occurred during the past few months. . . . Contains advice on Uniforms, Equipment, Military Courtesy—much other inspiring counsel on the problems facing the officer on active duty today. 410 Pages; Index.

$2.50

No. C-3 on Cavalry Journal book list.

MODERN MILITARY DICTIONARY

By GARBER and BOND

New edition, August, 1942

Ten Thousand Technical and Slang Terms of Military Usage

A

Abatage. A piece is said to be in abatage when the wheels rest on the brake shoes. A demolition by high explosives.

Abatis. An obstacle consisting of trees felled or placed with their tops to the front, often interlaced with barbed wire. A live abatis is one consisting of saplings bent to the ground but not cut, so that the leaves do not wither.

Abnormal Shot. A shot whose point of impact is more than six probable errors from the center of impact.

About Face. A facing to the rear in the School of the Soldier, executed by turning to the right.

Abreast. Said of a line of men or units, side by side. Equally advanced. On the same front.

Absent Without Leave. Absence from post or duty without permission from proper authority and when there is no intention of deserting. Abbreviated, A.W.O.L.

Addenda, Modern Slang

J

Jake. All right, in good order.

Jam Pots. Small bombs made of jam or other tin cans.

Java and Side Arms. Coffee with cream and sugar.

Jawbone. Credit; to buy without money; to fire a weapon over a qualification course when it does not count for record.

Jawbone Corporal or Sergeant. An acting corporal or sergeant.

Jazzing It. Diving close to the ground with an airplane.

Jeep or Jitterbug. A reconnaissance car.

The Cavalry Journal

1719 K Street, N.W. Washington, D. C.

QUARTERMASTER EMERGENCY HANDBOOK (New Revised Edition, 1942). The Quartermaster Association, Washington. 394 pp. Paper cover, 75c; leatherette, $1.00.

Following the "Forty Question and Answer Series" from the Quartermaster Review's *Storehouse of Knowledge*, this convenient, easy-to-carry volume is a ready reference for all officers and personnel on duty with the Quartermaster Corps.

Its various sections cover such subjects as War Department Technical Manuals and Subsistence Bulletins, Normal Set-up for a Post Quartermaster Office, Transportation Division, Fiscal and Finance Accounting, Military and Government Contract Law, Personnel and Company Administration, Supply, Preparation of Training Programs, Reference Data, Charts, Organization, and a Cross Index Reference for Study.

MILITARY MEDICAL MANUAL. (Fifth Edition, October, 1942). The Military Service Publishing Co., Harrisburg, Pa. 1,006 pp.

The purpose of this book is to present information of practical value to officers of the Medical Department of the Army of the United States.

An extensive index enhances the value of the three part volume. Part I outlines military matters from the medical officers' point of view. Part II deals with professional subjects peculiar to the medical officer. Part III gives detailed information of tactical employment of medical units in the field, including administration, supply and mess management, with special reference to small units. It should prove of great value as a reference book, particularly to men recently called from reserve and civilian status to serve in the Medical Corps in either a professional or administrative capacity.—E. D.

ARMY GUIDE FOR WOMEN. By Marion M. Dilts. Longmans, Green and Co., Inc., New York. 205 pp. $2.50.

This is another "guide book." It covers all of those subjects such as Uniforms and Insignia, Housekeeping, Mess, Military Courtesy, Pay and Allowances, Soldiers' Mail, etc. Designed to answer the questions that invariably confront the woman who is new in the army, it sets down innumerable figures and facts that undoubtedly one must learn. In many respects it seems to lose—or possibly fails to grasp—the total substance of army life.

As an answer manual to many necessary questions it is a ready reference.

FIELD ARTILLERY GUIDE. Prepared by the Staff of the *Field Artillery Journal*. 910 pp. $2.00.

The Field Artillery Guide is an excellent compilation of necessary working data. It is designed primarily as a field reference to be supplemented by manuals and range tables pertaining to the particular weapon with which the unit is armed.

Horse Feathers

"I'm working my way thru Officer Candidates School."

Forethought

The young Negro recruit was the victim of so many practical jokes that he doubted all men and their motives. One night while he was on guard, the figure of one of the officers loomed up in the darkness.

"Who goes dere?" he challenged.

"Major Moses," replied the officer.

The young Negro scented a joke.

"Glad to meet yuh, Moses," he said cheerfully, "advance and give de ten commandments."

Could Be

A recruit was being given an intelligence test in the army.

"What would happen if one of your ears was cut off by a bayonet?" asked the examiner.

"I couldn't hear so well."

"What would happen if your other ear was cut off?"

"I couldn't see."

"What do you mean?"

"My hat would fall down over my eyes."

More Plates, Dearie!

A colonel's wife sent a note to a captain on the post. "Colonel and Mrs. Browne request the pleasure of Captain Greene's company at dinner on May 15th," the invitation read. Shortly she received a courteous reply.

It went like this: "With the exception of five men on leave and three on sick list, Captain Greene's company will take great pleasure in accepting your invitation!"

German Flyer (at gates of Heaven): "We'd like to come in."

St. Peter: "How many are there in your group?"

Flyer: "Forty."

St. Peter: "Sorry, only four of you can enter."

Flyer: "Why?"

St. Peter: "That's all Goebbels said were shot down."

Some Map!

A homely girl approached the information desk at the tourist park, and asked for a road map.

"Here you are," said the clerk.

"Well, I hope I don't go wrong," replied the girl.

"With that map," retorted the clerk, "you can't possibly."

Same To Yuh!

1-A: "You mean there's nothing wrong with me, Doc?"

MD: "Well, your left leg is swollen, but I wouldn't worry about it."

1-A: "If your left leg was swollen I wouldn't worry about it, neither."

Exempt

The colonel bumbled into the kitchen and "Attention!" screamed the mess sarge.

"What's the matter with that man sitting by the stove?" queried the colonel plaintively. "Why didn't you stand up, my man?"

"Sir," replied the cook, still sitting, "I just begun this recipe which says don't stir for twenty minutes."

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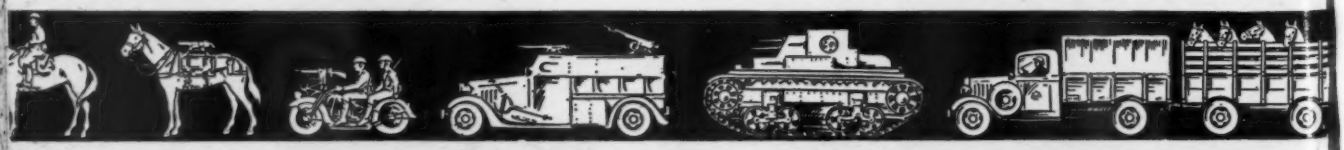
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